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RAILWAY AGE

THE STANDARD

APRIL 21, 1952

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53 extra ideas in Railway Age this issue!

TRADE and business publications are one of industry's most important sources of information. And as readers know, these publications not only contain informative material in their editorial sections, but also offer a wealth of *extra* ideas in their advertising pages.

That's why these days, smart readers are giving both parts an extra-thorough combing. With costs on the rise and greater output a must, ideas that help a company boost its efficiency are more valuable today than they have ever been.

In this issue of Railway Age, there are 53 advertisements, many of them containing ideas that may help *your* business. And if you manufacture or buy machinery of any kind, we believe you'll find helpful information in the Timken® tapered roller bearing advertisements that appear regularly in this publication. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".

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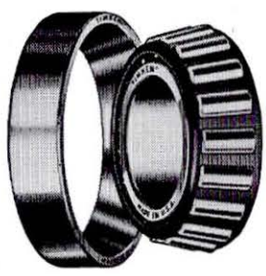
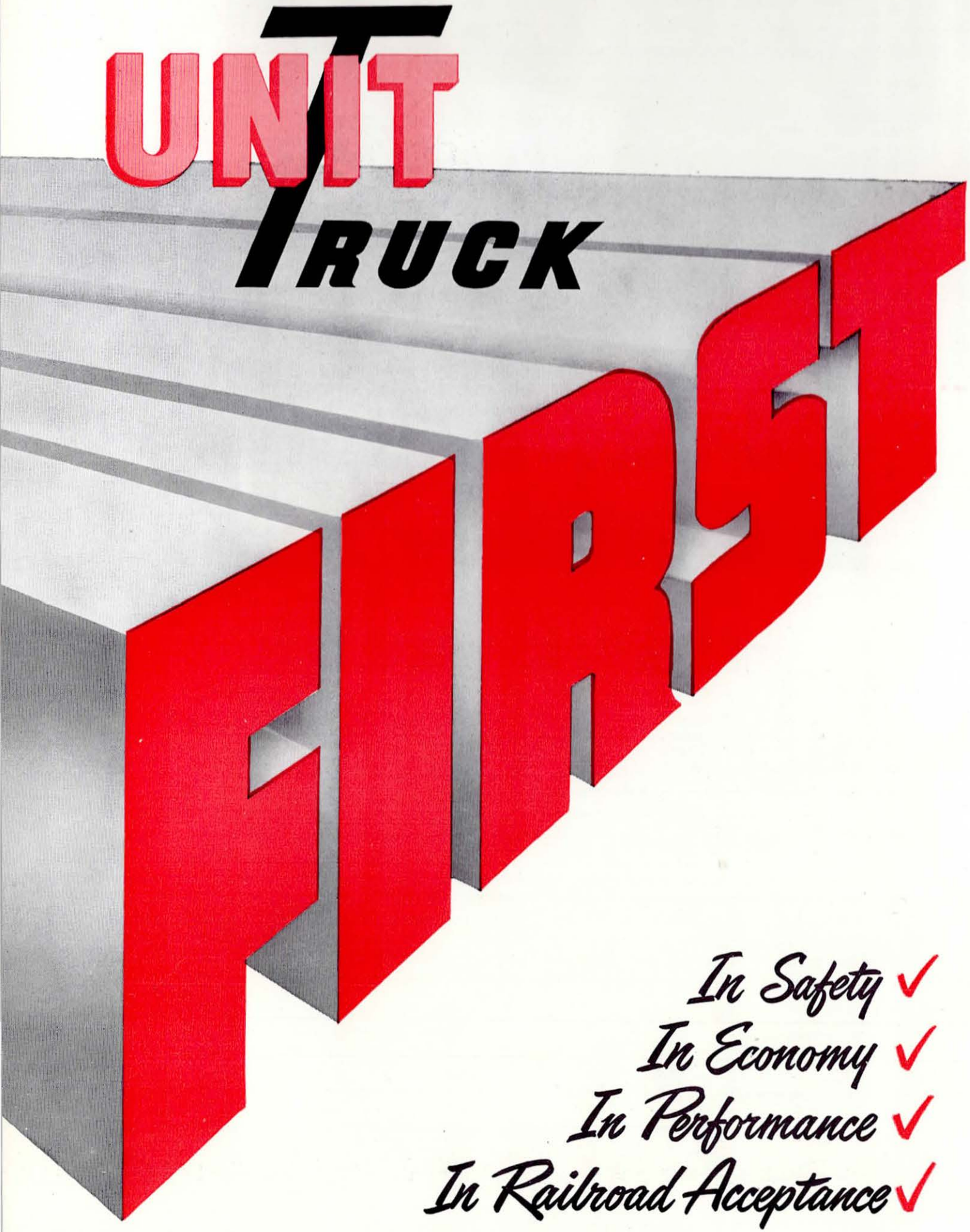
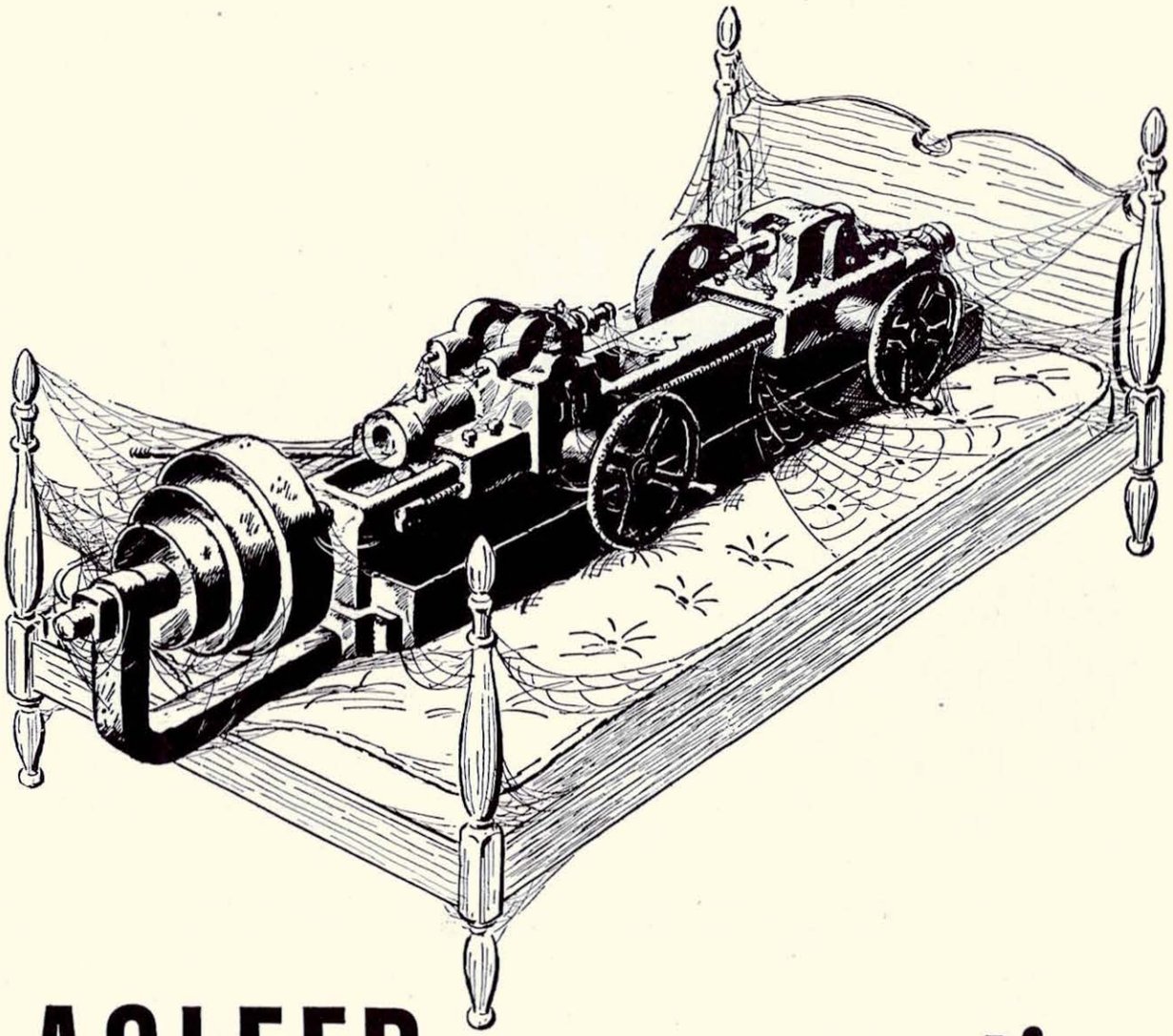
TRADE-MARK REG. U. S. PAT. OFF.
TAPERED ROLLER BEARINGS



NOT JUST A BALL ○ NOT JUST A ROLLER ▭ THE TIMKEN TAPERED ROLLER ▭ BEARING TAKES RADIAL ◎ AND THRUST →◎← LOADS OR ANY COMBINATION ✳



In Safety ✓
In Economy ✓
In Performance ✓
In Railroad Acceptance ✓



ASLEEP...on your time

An obsolete or worn-out machine, stuck away, sleeping and forgotten in a corner of your plant, is costly.

It is not doing you or anyone else any good. It is taking up valuable space.

Call in a scrap dealer and let him haul away your dormant scrap. It will help to supply the tons of additional scrap that is needed if the country's steel furnaces are going to continue working at full capacity.

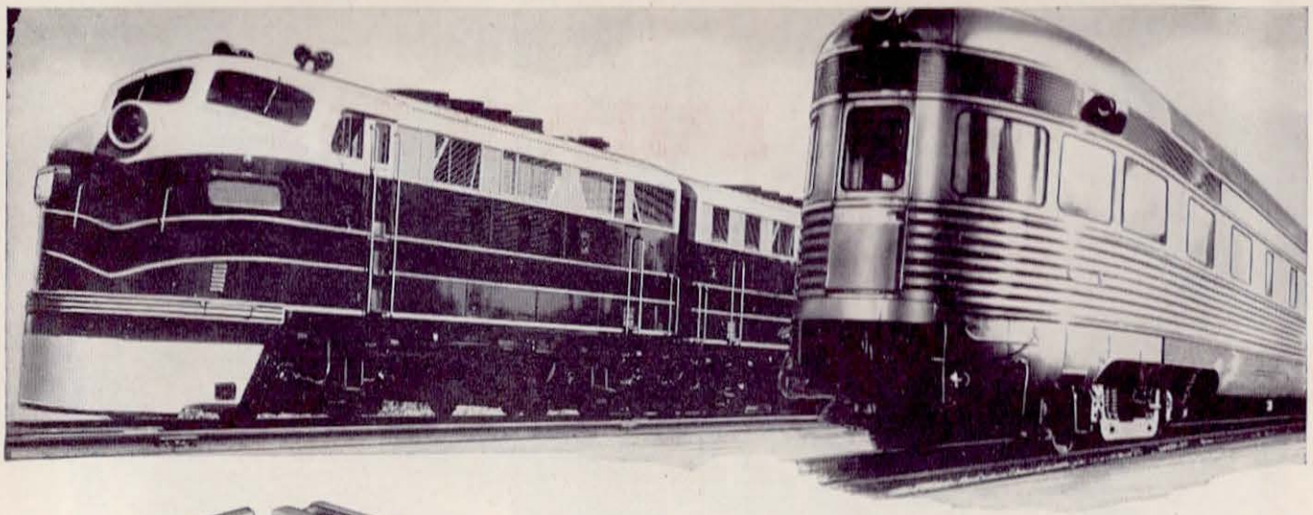
Today there are millions of tons of dormant scrap hidden away in plants and factories, and on farms.

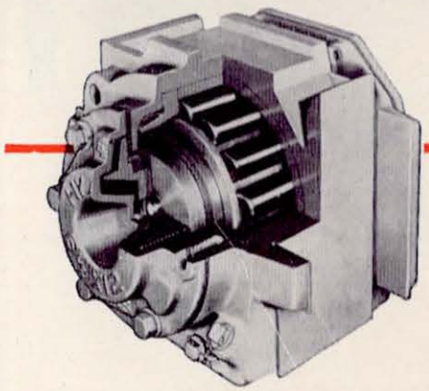
If the steel mills can get that scrap, the steel supply picture will be very much brighter, with more steel for everybody. Call in a scrap dealer today!

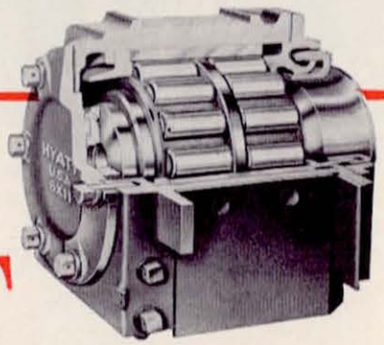
BETHLEHEM STEEL

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

More Scrap Today...More Steel Tomorrow







HYATT

ROLLER BEARING JOURNAL BOXES

THE COMPLETE dependability of Hyatt Journal Boxes is enhanced by basic design features which permit reduced maintenance expense and better operating characteristics.

Hyatt Roller Bearing Journal Boxes are designed so that they can be removed from car journals easily and quickly without disturbing press fits or using special tools. All bearing and box parts are readily accessible for cleaning and inspection. The bearings can be completely dismantled and re-assembled by hand.

Wheel turning is simplified since the boxes can be slipped off easily and lathe work performed using collets instead of centers, thus permitting deeper, more accurate cuts.

In Hyatt Roller Bearing Journal Boxes, car axles can float laterally through the bearing within predetermined limits. This has a cushioning effect on sidewise shocks producing an easier ride and reducing wheel flange wear.

★ ★ ★

To see for yourself how the Hyatt design permits real maintenance savings, write for our simple plastic journal box visualizer and demonstrate for yourself why "It's Easier With Hyatts." Hyatt Bearings Division, General Motors Corporation, Harrison, N. J.

HYATT ROLLER BEARING JOURNAL BOXES

Vol. 132, No. 16 April 21, 1952

RAILWAY AGE

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Railway Signaling & Communications Car Builders' Cyclopedia Locomotive Cyclopedia
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Marine Engineering & Shipping Review Marine Catalog & Directory
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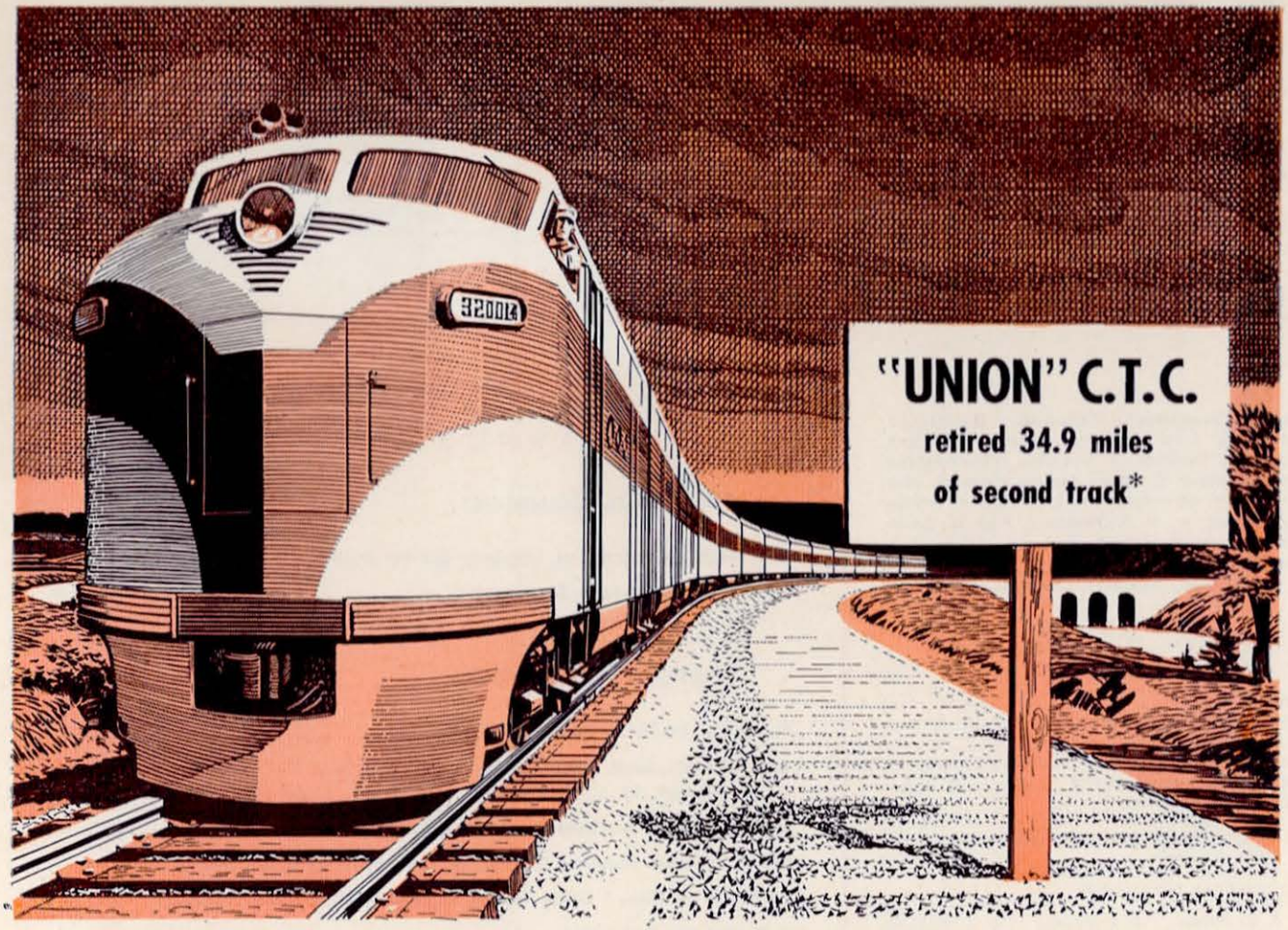
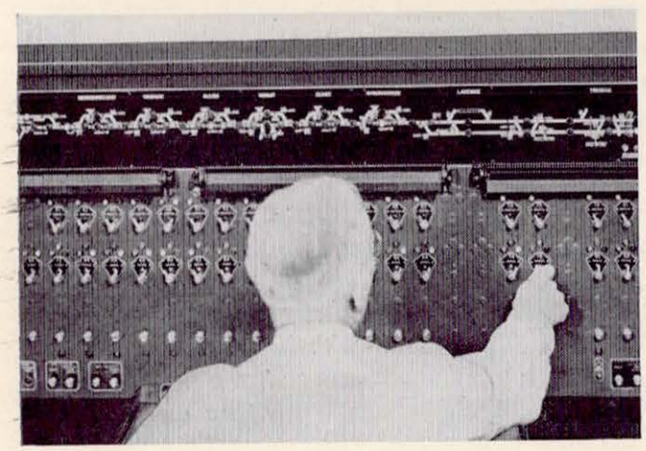


Here's a way to build profits ... by using LESS track !

This is the record

1. Centralized traffic control was installed on 137 road miles.

2. 27.81 miles of second main track were retired and 7.13 miles were converted to sidings.



3. Retired a substantial investment in grading for additional second main track where track had never been laid.

4. Retirements consisting principally of 28 miles of track and grading amounted to a gross credit to capital account of $1,085,389.00 or a net credit of $464,886.00 for the entire project.

**Factual data will be supplied on request.*

"Union" centralized traffic control can reduce terminal-to-terminal time with safety and pay its way through reductions in operating expenses. We'd like to help you use C.T.C. to reduce your operating costs.

UNION SWITCH & SIGNAL
DIVISION OF WESTINGHOUSE AIR BRAKE COMPANY
SWISSVALE PENNSYLVANIA
New York • Chicago • St. Louis • San Francisco

WEEK AT A GLANCE

CURRENT RAILWAY STATISTICS

Operating revenues, two months	
1952	$1,712,000,596
1951	1,564,685,412
Operating expenses, two months	
1952	$1,335,056,113
1951	1,253,704,201
Taxes, two months	
1952	$206,697,408
1951	181,224,306
Net railway operating income, two months	
1952	$141,962,386
1951	98,153,367
Net income, estimated, two months	
1952	$91,000,000
1951	53,000,000
Average price railroad stocks	
April 15, 1952	58.12
April 17, 1951	56.68
Car loadings, revenue freight	
14 weeks, 1952	10,045,209
14 weeks, 1951	10,233,481
Average daily freight car surplus	
Week ended April 12, 1952	17,627
Week ended April 14, 1951	7,237
Average daily freight car shortage	
Week ended April 12, 1952	1,750
Week ended April 14, 1951	15,996
Freight cars delivered	
March 1952	8,159
March 1951	7,011
Freight cars on order	
April 1, 1952	115,854
April 1, 1951	158,619
Freight cars held for repairs	
March 1, 1952	91,906
March 1, 1951	87,671
Net ton-miles per serviceable car per day	
January 1952 (preliminary)	977
January 1951	1,017
Average number railroad employees	
Mid-February 1952	1,218,281
Mid-February 1951	1,253,068

In This Issue . . .

CAN CROSS HAULING of empty cars in terminals be reduced or eliminated? That question is raised, some of the circumstances under which cross hauling is justified are outlined, and some means of reducing it are suggested, in the page 58 article by E. W. Coughlin, of the A.A.R.'s Car Service Division. The article is the third of a series by Mr. Coughlin on basic principles and preferred practices in freight car distribution and handling.

IT'S UP TO THE RAILROADS to lead the fight for preservation of private enterprise in the United States, Lackawanna President William White told the New York Railroad Club at its first dinner meeting on April 17, in an address which is reported in condensed form in this issue's news pages. Other developments also covered in the news section include a new president for the Western Maryland; an Illinois Central proposal for modification of its capital structure; a possible 1,600-to-1 stock split on the T.P. & W.; release of additional questionnaires by the Railroads' Tariff Research Group; announcement of a versatile new road-switcher designed for military use anywhere in the world by Electro-Motive; also, another surge of heavy floods in the Midwest, just to the north of the area which was so hard hit less than a year ago.

A NEAR RECORD TOTAL of $2,175,859,000 was spent by Class I railroads for fuels, materials and supplies in 1951. The only year in which similar expenditures were larger was 1948—and the difference was less than $7.5 million. For details of 1951 expenditures see page 70.

In Washington . . .

"THE UPWARD TREND of expenses, prices and an unsettled wage situation, combined with uncertainty as to the future trend of traffic, present potential dangers to the whole system of transportation, unless a greater degree of assurance is given as to the adequacy of future earnings." As a step toward such "assurance," the I.C.C. in its decision last week in the Ex Parte 175 freight-rate increase case, has authorized additional increases sufficient to bring the whole Ex Parte 175 advance "substantially" up to the 15 per cent which the railroads had originally asked — subject, however, to more "hold downs" than the carriers had contemplated on such traffic as coal, iron ore and grain. The commission's decision—estimated by it to yield about $635 million a year—is summarized on page 71.

WEEK AT A GLANCE

THE I.C.C.'S CONSCIENCE has been salved by results of its own regulatory policies and economic developments of the past 15 years. In a 1937 decision in the Ex Parte 115 rate case, the commission reported that it "shocked the conscience" to realize that the Pocahontas lines would benefit from increases found justified only because roads in other territories needed the revenues. In its Ex Parte 175 decision of April 11, the commission said "it is no longer true, as was the case in years past, that the earnings of the Pocahontas lines 'shocked the conscience.'"

. . . And Elsewhere

"WHY NOT SPEND ANOTHER NIGHT IN THIS HOTEL? And fly home via American Airlines," read an attractively printed card which one of our roving editors found recently on the night table of a Boston hotel. Of course we have no way of knowing how much business the little card may have produced for American, but a single passenger fare would pay for printing a good many thousand of them. And they don't hurt relations with cooperating hotels, either. We mention this just to show the alert promotional methods which have enabled the air lines to win such a large proportion of passenger travel.

ON THE EVE OF A MAJOR PASSENGER schedule rearrangement designed to improve service and reduce expenses, Boston & Maine President E. S. French, in an exclusive interview, told a *Railway Age* reporter: "I believe our passenger service can be made self-supporting —and possibly somewhat profitable—if we could discontinue short-haul commutation services operating within a 15-mile radius of Boston together with lightly patronized services on a few branch lines, and if the state utility commissions would accept managerial judgment in the selection of passenger train schedules and train stops. However, the discontinuance of essential—though non-remunerative—commutation services presents social and political problems which must be considered."

RAILROAD AGE GAZETTE—one of the predecessors of Railway Age— *was credited with establishing "the modern concept of public relations" in a recent issue of the Journal of the Public Relations Society of America. A 1909 editorial by Ray Morris, of the Gazette's editorial staff, was the sparkplug, the journal says. Excerpts from Mr. Morris' editorial, incidentally, were quoted in the lead editorial in our issue of last October 29.*

HOW SUBSIDIZED TRANSPORTATION — in competition with private transportation — may lead to subsidized industry — in competition with private industry — is being learned the hard way by New Jersey real estate dealers. They, it seems, are up in arms over a Port of New York Authority proposal to erect factories and other commercial establishments on the edges of authority operated airports. The realtors claim that such commercial establishments, being on public land, would be virtually tax free — but would operate in competition with establishments built on fully taxed privately owned land.

AS AN AFTERMATH of last summer's midwestern floods, the Red Cross reports that it has spent some $14.5 million on emergency care and shelter and long-term rehabilitation of 24,000 families in the four-state flood area. Over $1 million of this, the agency says, was "expended for railroad employees in Wyandotte county, Kan."

"RESULTS MANY TIMES more valuable than the investment in time and money involved" are reported by the New York Central from the special training program now being carried out for its first line operating department supervisors in the Chicago area. The program, which is fully described in the illustrated feature article beginning on page 55, is being conducted in collaboration with the Industrial Relations Center of the University of Chicago by the railroad's personnel and public relations department, headed by Vice-President L. W. Horning.

HERTZ urges ALL RAILROADS ... give the HIGH BALL to the rail-auto plan!

Is your road doing its part to help sell the Rail-Auto Travel Plan to the public?

For years, Hertz has invested many thousands of advertising dollars to popularize the idea of leaving the family car at home and taking a train for long trips . . . then renting a car from Hertz at the destination. We think the idea makes sense.

And it's evident that promotion of Rail-Auto Travel is producing results. Last year, Rail-Auto travelers covered more than 500 million railroad miles *before* they rented a car! That figure represents a lot of revenue railroads might never have received without this modern travel plan sparked by Hertz.

But it takes constant education to change a habit of the American public. So, active selling and advertising of this travel plan by *all* railroads is needed . . . if this job is to be done right.

Hertz continuously advertises the Rail-Auto Travel Service in top-flight national magazines . . . Life, Saturday Evening Post, Collier's, Holiday, National Geographic, Time, Newsweek, U. S. News & World Report, and other publications. In addition, many thousands of Rail-Auto Travel folders are distributed yearly by Hertz . . . and by sales-minded railroads. Many railroads are promoting the service in their national and local advertisements, in their timetables, ticket office displays and other promotional media.

Just remember . . . private auto long-distance travel is currently estimated at *500 billion* miles every year. The railroad industry's share of this rich potential depends on how aggressively *your road* and *all* roads, promote the Rail-Auto Travel Plan!

Hertz provides car rental service in more than 700 locations . . . in over 500 important cities . . . at every worth-while point served by major railroads. Hertz furnishes rail travelers with new cars in excellent condition at low rates . . . with gas, oil and proper insurance included.

As an added convenience to travelers, Rail Credit Cards are honored for service, identification and charge privileges at all Hertz stations throughout the United States and Canada.

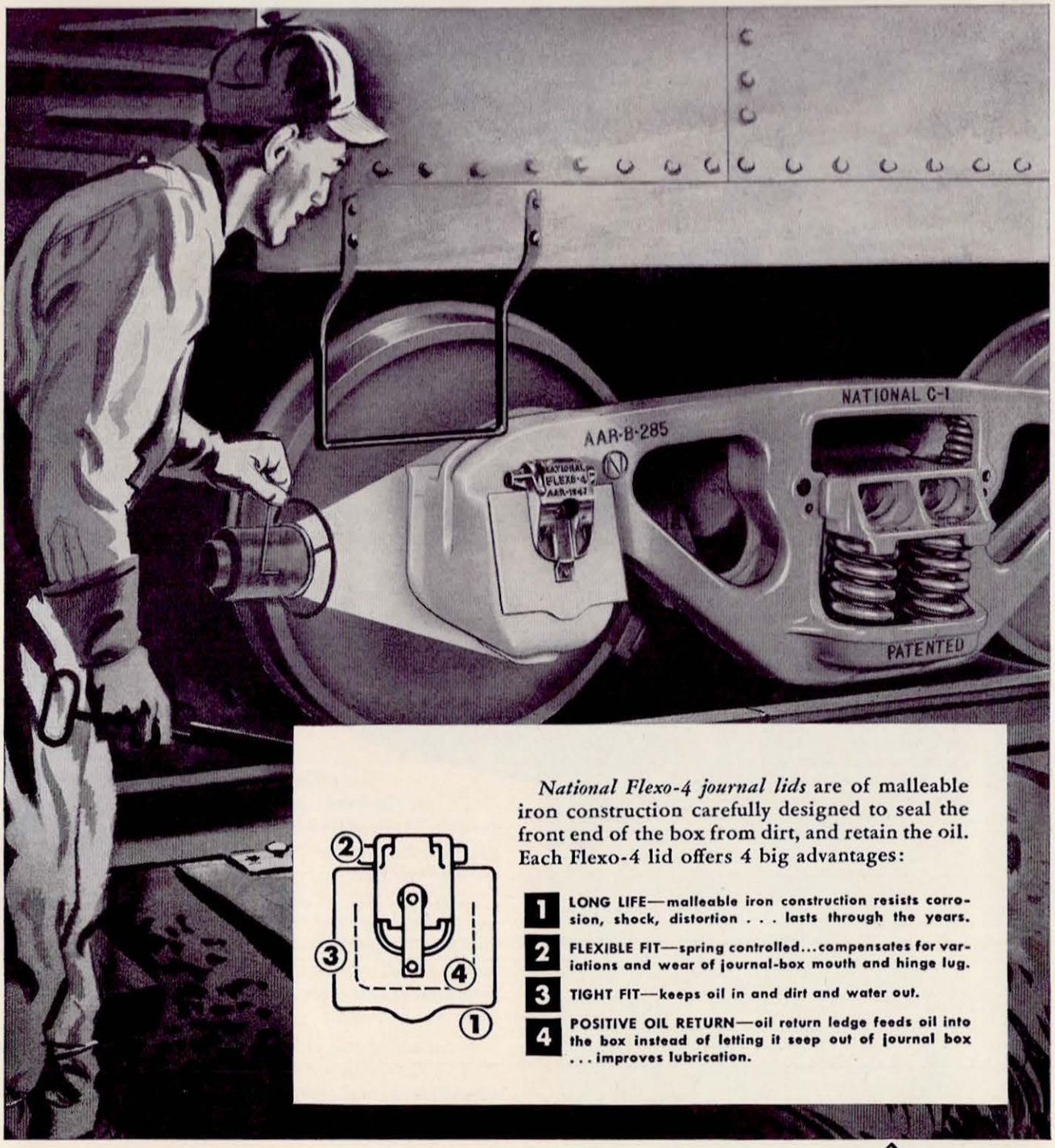
HERTZ DRIV-UR-SELF SYSTEM

Our 28th Year of Finest Car Rental Service

HERTZ *Driv-Ur-Self* SYSTEM

Dept. D42, 218 S. Wabash Ave., Chicago 4, Ill.

"Flexo-4's sure slam the lid on hot-box worries!"



National Flexo-4 journal lids are of malleable iron construction carefully designed to seal the front end of the box from dirt, and retain the oil. Each Flexo-4 lid offers 4 big advantages:

1. **LONG LIFE**—malleable iron construction resists corrosion, shock, distortion . . . lasts through the years.
2. **FLEXIBLE FIT**—spring controlled...compensates for variations and wear of journal-box mouth and hinge lug.
3. **TIGHT FIT**—keeps oil in and dirt and water out.
4. **POSITIVE OIL RETURN**—oil return ledge feeds oil into the box instead of letting it seep out of journal box . . . improves lubrication.

FOR ALL NEW CARS AND REPLACEMENTS, SPECIFY NATIONAL FLEXO-4 LIDS.

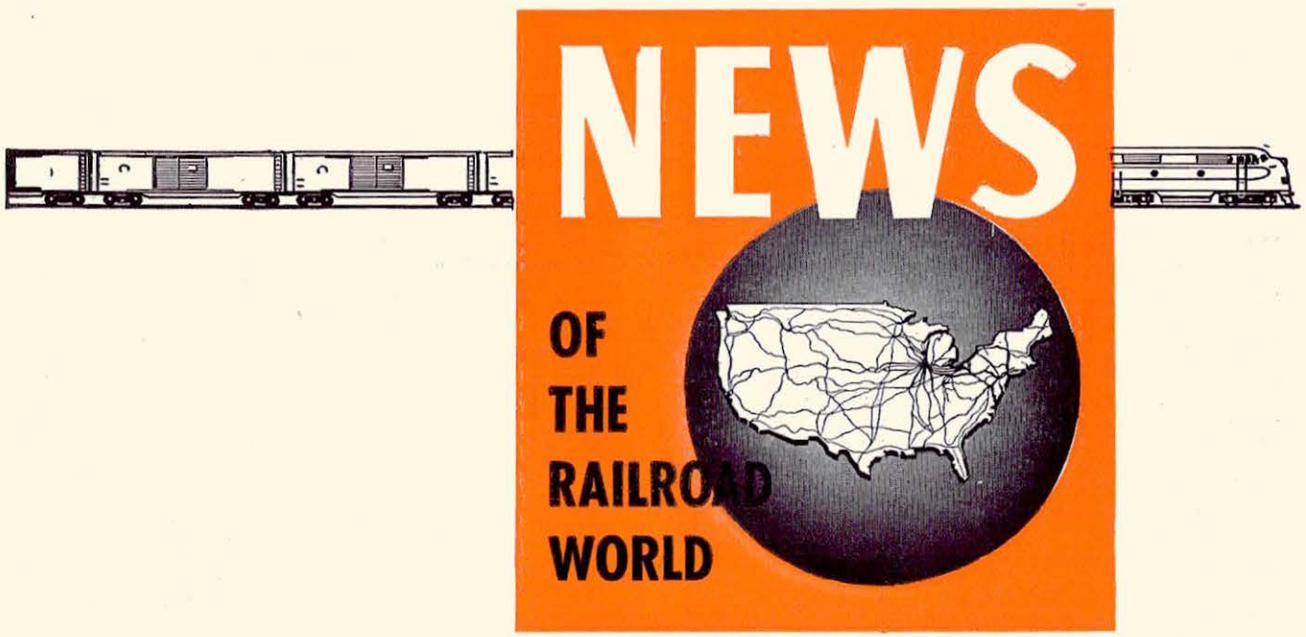
NATIONAL MALLEABLE AND STEEL CASTINGS COMPANY, CLEVELAND 6, OHIO.

A-3572

NATIONAL MALLEABLE and STEEL CASTINGS COMPANY

COUPLERS • TRUCKS • YOKES • DRAFT GEARS • JOURNAL BOXES AND LIDS

NATIONAL Products FOR TRANSPORTATION AND INDUSTRY M&SC Est. 1868



"Pitch Together" to Preserve Private Enterprise, White Urges N. Y. Railroad Club

"The railroads were the first victims of an improper kind of governmen regulation. Today we have the responsibility to lead the fight that will reverse the trend, to the great benefit of all business and of all the public."

So William White, president of the Delaware, Lackawanna & Western, told the New York Railroad Club at its first dinner meeting on April 17, in addressing the club on "Why the Railroads Must Do a Better Public Relations Job."

"There are," Mr. White said, "two kinds of public relations." The first kind Mr. White described as "that type which has as its basis the right kind of service to the public; which recognizes that . . . all those having contacts with shippers and passengers are our primary ambassadors of good will." To promote this kind of public relations he advocated "the best possible railroad service at the lowest cost consistent with financial safety; salaries and wages in all respects adequate and just, and discovery and recognition of individual merit."

The greater part of his address, however, was devoted to "the other kind of public relations," with respect to which he said in part:

"The fact that we have had a railroad problem in this country for many years stems from the fact that the railroads have been taken too much for granted and that the railroads themselves have not attacked the problem in the right way. They have not taken that problem to the bar of public opinion, nor have they convinced American businessmen and the public generally that the railroad problem is one to which they must give heed in their own interest and not in the interest of the railroads alone.

"This problem is not nearly so serious to railroad management, as such, as it is to the general public, and particularly to American businessmen. It matters not one bit whether a few railroad presidents who are close to retirement age become federal managers and have their salaries reduced. Much more serious than that would be the effect upon all people and all business of government ownership and operation of our railroads, because no government has ever been adept at running a business and we could expect only poorer service and higher and higher deficits saddled on the American taxpayer.

Government Ownership by Default

"There is no public demand for government ownership of our railroads. But let that provide no comfort, because government ownership could come easily by default through a refusal of the American public, and particularly the American businessmen, to take heed of the danger signals which stem from:

"1. Regulatory laws which have become archaic and which seek to regulate the railroads as a monopoly, which they are not.

"2. Regulatory procedures that are outmoded and take too much time.

"3. A type of political thinking that permits use of public funds in aid of other forms of transportation and expects railroads—paying their own way—to compete in the transportation markets of the country.

"4. A type of economic philosophy existing in our regulatory agencies that fails to recognize the necessity for railroads earning high profits when doing a high volume of business.

"5. An inadequate rate of return—which is simply another expression for inadequate profits—over a long period of years, which stems from the causes enumerated above—and which are causing an erosion of capital and makes the investment of money in railroad securities a risk that is too great for the investor.

Comes from Home Town

"These, as I see them, are the fundamental aspects of the railroad problem which need correction. Correction must come from the halls of Congress, from the legislative assemblies of each state, and from the federal and state regulatory agencies, and it is to the bar of public opinion that we must take these problems. Public opinion—which is the goal of public relations—comes from the individuals and the groups back where the voters live, when they are awakened to the fact that things are going on that threaten their security, their future and their own independence of action. In other words, public opinion comes from all of our home towns, from the farms and from articulate groups.

"So far as I am able to learn, the only industrial group outside of the railroads that has been constantly aware of the encroaching threat to the American way of life has been the power and light industry, which has fought unceasingly on all fronts against encroachment by government on what should be a competitive business. And even the power and light industry has had more failures than successes in its fight, because no single group —or for that matter no pair of industries —can wage a fight of this nature successfully.

"There must be a genuine crusade in all industry awakened by the railroads to assert a new declaration of independence, which properly advocated, will win in the near future the overwhelming support of

the people. When under the guise of emergency or some other excuse, practically every business is getting a dose of regulation and the usurpation by bureaucracy of the functions of private management, we will at least find some public understanding of the background in which the railroads alone have had to carry the fight for so long.

Eastern Railroads' Program

"Eastern railroads have for some time been engaged in a definite program for the establishment of a modern national transportation policy. The campaign asks no special advantages. It simply seeks that transportation be put on a basis of fair returns for all types of transportation, based on the cost and value of services when stripped of crippling regulation and a maze of government subsidies thrown helter-skelter into highway, water and air services without regard to basic costs or values to shippers.

"Behind this campaign each of the eastern railroads is taking every possible step to improve relations with the public in basic services. We embarked upon this new public relations program because of mounting evidence that there was a growing public fear about the very distortions in government power which have crippled us so greatly in our business. We did not have to invent our arguments or go seeking blindly in a wilderness of ignorance for persons who might agree with us. A small but highly important and intelligent minority of thoughtful people had begun to say the very arguments which applied to our case.

"We perceive it to be our job to put facts into the hands of enough people to create an eventual public understanding of our problem, which most surely will have its effect on legislation in Congress. And this is where we beseech your aid, both as business partners with us and as important spokesmen in the American economy.

"It takes a long, hard pull to correct an error in public thinking—a much greater effort than usually is involved in passing the original hasty laws that probably were based on political expediency.

"All railroad men who are worth their hire must join the battle, but they cannot carry this fight by themselves. So we ask you and all American businessmen to join us in this public relations program. You and we, and all American business, are either going to go forward or sink together under the heavy hand of regulation. So we might as well get into the game and pitch together.

"For Whom the Bell Tolls"

"You probably remember Ernest Hemingway's book of a few years ago entitled 'For Whom the Bell Tolls.' The theme was that when one man dies, a little bit of all mankind dies. The quotation on which he based his story was, '. . . Never send to know for whom the bell tolls; it tolls for thee.' If anything was ever true as it applies to business that certainly is true today. Years ago the bell tolled for the railroads. No one was very frightened then, but as the bells toll for others we gain understanding and frightened comrades."

E.-M.D. Builds Locomotive To Army Specifications

For the first time in its history the Electro-Motive Division of General Motors Corporation has developed and built a locomotive entirely to customer's specifications. The locomotive is basically a road-switcher and has been termed MRS-1 (Military Road-Switcher). The customer is the United States Army, which purchased 13 locomotives of this design after drawing up all the specifications.

Nelson C. Dezendorf, vice-president of G.M. and general manager of the Electro-Motive Division, disclosed on April 14 that the first of 13 of these locomotives has been delivered to the Army and that the others will follow in rapid succession. The locomotive is being tested on midwestern railroads.

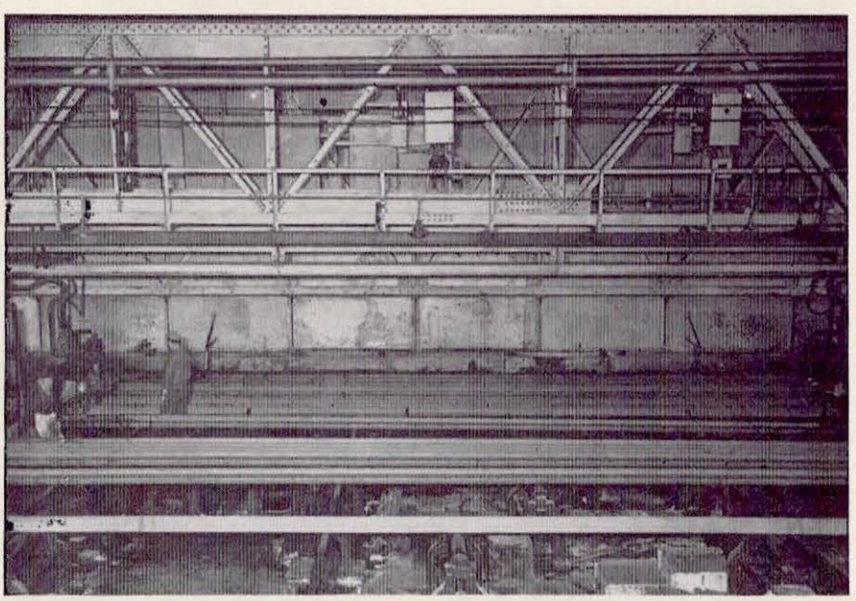
The locomotive is designed so that it can be successfully operated in temperatures ranging from minus 40 deg. F. to 125 deg. F. By simple mechanical adjustments the wheels can be moved on the axles so that the locomotive can be operated on tracks ranging from standard gage up to the widest gage encountered on railroads anywhere. Its draft gear can be fitted quickly with couplers of any type used throughout the world and can be placed in draft-gear pockets at two heights—34½ inches and 41 inches above the rail. It can be regularly operated on fuel oil of as low a grade as 40 cetane and, in emergencies, can be operated on an even lower grade. It is designed for multiple operation with other locomotives of similar characteristics, regardless of builder, which the Army Transportation Corps possesses or has on order.

"Despite its wide range of performance characteristics, the locomotive is made up of standard domestic diesel locomotive wearing parts and assemblies," said Mr. Dezendorf.

"Thus we were able to shorten the development of the locomotive by years and to make it possible to go into production without plant conversion if we get into a major emergency. So many of the locomotive's major components are standard that Electro-Motive could start producing it without any major delays for changing facilities. At the end of the emergency we could go back to production of locomotives for domestic use with small delay and no expensive conversion. If we send a lot of these locomotives overseas, there will be no problem on replacements of wearing parts.

"It is widely known that American railroads with our diesel locomotives haul much longer trains at faster speeds than those of any other continent. The Army Transportation Corps sought the development of a diesel locomotive that would make it possible to apply the inherent advantages of American motive power wherever needed. This was quite an assignment because no other continent has the roadbeds, rails, bridges and other structures that will support the weights of locomotives that are entirely permissible in the United States.

"A measure of the job done on the MRS-1 is found in comparison of axle loadings. In the type of domestic locomotive which does the kind of work in the United States that will be assigned to this military locomotive, an axle loading of as high as 60,000 lb. is entirely permissible and in some domestic services even more weight is deliberately put into the locomotive to give it greater adhesion to rail. But the Army Transportation Corps gave us a limit of 41,000 lb. per axle for a locomotive which not only has to do approximately what the 60,000 lb. per axle domestic locomotive has to do, but



A FOURTH BATTERY of equipment for hardening rail ends has recently been placed in service at the Steelton plant of the Bethlehem Steel Company. This unit puts the Steelton plant in position to end harden approximately three-fourths of its normal output of rails, while a fifth unit, plans for which have been completed, will provide practically 100 per cent coverage. The first end hardening unit of this type went into operation in 1946, a second in 1948, and a third in 1950. A description of the early operation appeared in the issue of *Railway Age* dated September 18, 1948.

The MRS-1, versatile 1,600-hp. diesel-electric road-switcher, built to Army specifications by the Electro-Motive Division of General Motors Corporation.

in addition has to carry a lot more machinery. Our engineers have accomplished this by weight reduction in car bodies and truck frames and an entirely new design of a six-wheel three-motor truck."

The new locomotive is 57½ feet long, 13½ feet high from the rail, and 9 feet 8 inches wide over grab irons. It is powered with a GM 16-567B diesel engine rated at 1,600 hp. The D-12 generator is the same as that used on all GM freight locomotives, and the alternator is a D-14. The six motors are Electro-Motive D27 type.

The gear ratio is 60:17 and, with 40-inch drivers, the top speed is 77 m.p.h. Its total weight of 246,000 lb. at the rail is about the same as standard locomotives of the same horsepower. Dependable adhesion on good dry rail at full horsepower is 23 per cent. Starting tractive force on good dry rail is 30 per cent. The electrical circuit has two motors in series with three groups in parallel. There are no shunt steps. The operator has a choice of either full shunt or no shunt. Transition is made at approximately 30 m.p.h.

The fuel capacity is 800 gallons, and water capacity for the heating boiler, 800 gallons. Without the boiler, the fuel capacity is doubled. Sand capacity is 18 cubic feet.

"No-Strike" Injunction Issued at Cleveland

A preliminary injunction, forbidding further "strikes against the government" by members of three railroad operating unions was issued at Cleveland on April 15 by Federal Judge Emerich B. Freed.

The injunction will remain in effect until Judge Freed can hold another hearing on the merits of the case and on the question of granting a permanent injunction. It replaces a temporary restraining order issued by Judge Freed on March 11 to halt a three-day strike against the New York Central, Lines West of Buffalo, and the Terminal Railroad Association of St. Louis. It is directed against the three unions whose members were involved in that strike—the Brotherhood of Locomotive Engineers, the Brotherhood of Locomotive Firemen & Enginemen, and the Order of Railway Conductors (*Railway Age*, March 17, page 11). It was issued at the request of Department of Justice attorneys, acting for the Department of the Army, which has been in control of the railroads since August 1950, because of the wage and rules dispute between the railroads and the three operating brotherhoods—the same dispute which led to the March strike.

In issuing the injunction, Judge Freed declared that the court "must in the interests of national safety, exercise its power to prevent irreparable injury," but asserted that the courts should not be used "to impel collective bargaining." It is the "duty" of "the government, the railroads, and the unions involved" to find a solution, he said.

Spokesmen for the brotherhoods have announced their intention to appeal Judge Freed's ruling. A conductors' representative was reported to have said that "We are determined to get a Supreme Court ruling both on the seizure question and the injunction issue."

Katy Denied Truck-Competitive LCL Rates

The Missouri-Kansas-Texas will not be allowed to charge l.c.l. rates competitive with those of trucks, the Texas Railroad Commission has ruled. Early this year the road sought permission to reduce intrastate l.c.l. rates to the level charged by competing truck lines, in view of losses of this traffic to highway carriers.

The commission, in rejecting the request, said the road had not proved it could operate the service profitably at the lower rates and that other services might suffer accordingly. The commission also cited the recent 6 per cent general freight rate increase which was granted, the commission said, on plea of the Katy and other roads that it was needed to pay operating expenses.

[The Texas commission's decision was rendered prior to the Interstate Commerce Commission's final decision in the Ex Parte 175 rate increase case, reported on page 71. Hence, the "6 per cent general freight rate increase" refers to the I.C.C.'s earlier interim decision in Ex Parte 175.—Editor]

Car Owners Approve $2 Per Diem Rate

Railroad subscribers to Car Service Rules administered by the Car Service Division, Association of American Railroads, have voted in favor of increasing the per diem rate for rental of freight cars from $1.75 to $2. The higher rate is expected to be made effective May 1.

It was proposed by the general committee of the A.A.R.'s Operating-Transportation Division and submitted by the A.A.R. board of directors to car owners. The latters' votes, by letter ballot, were on the basis of the number of cars owned.

The way was cleared for the increase, so far as the government's stabilization program is concerned, when the office of Price Stabilization announced on April 11 that per diem payments had been exempted from price ceilings. The exemption also extends to car-rental payments on a mileage basis and charges for protective services to perishable freight. The O.P.S. action was taken by Amendment 11 to General Overriding Regulation 14.

N.Y.C. Received 420 Diesel Units in 1951—Metzman

The New York Central System last year added 420 units to its diesel-electric locomotive fleet, more than in any previous year, Gustav Metzman, president, told stockholders in the road's recently released annual report. Units presently on order and scheduled for delivery this year and next will bring the system's total to 1,939, or about 54 per cent of requirements for full dieselization, he added.

In addition, Mr. Metzman said, the system acquired 7,707 new freight cars in 1951. New freight cars received so

GUEST STAR OF THE "RAILROAD HOUR," mezzo-soprano Nell Tangeman, has a special interest in the program scheduled for April 21. She will sing the lead in "Ermine," opposite Gordon MacRae, to an audience that will include her father, R. J. Shelky, a veteran engineman on the Pennsylvania who has spent most of his 45-year railroad career in locomotive cabs. Here he poses with his daughter in one of the road's GG-1 electrics. Normally, however, he is assigned to diesel runs between Indianapolis and Columbus.

far this year, and those still on order, total 15,951.

When the seven self-propelled diesel rail passenger cars on order are delivered, the Central's fleet of this equipment will aggregate 18 units.

Malleable Castings Group Sets New Sales Conditions

The Malleable Founders' Society, through its managing director, Lowell D. Ryan, has announced issuance of new terms and conditions of sale. These terms, while similar to those previously published by the society, contain "a number of rather important changes," says Mr. Ryan's announcement. They were approved by the National Association of Purchasing Agents on March 3.

Copies of the new document may be obtained by writing to the society's offices, Union Commerce building, Cleveland 14.

Fraser Says Government Shares Profits, Not Losses

"Government has reached far into management of business today and in many ways plays the role of a senior partner, except that government shares in the profits without sharing in the losses," Duncan W. Fraser, president of the American Locomotive Company, told stockholders at their annual meeting in New York on April 15.

Alco's net sales in 1951 amounted to $235,029,613, compared with $138,869,197 in the preceding year, according to the annual report, which was released at the meeting. Net income was $7,014,553, compared with $6,341,205. Income and excess profits taxes totaled $9,918,000, compared with $5,443,000 in 1950.

Shipments of diesel-electric locomotives last year reached a new record high, both in quantity and dollar value, the report said. At the end of 1951 the backlog was approximately $998,000,000, the largest in the history of the company. The backlog included over $98,000,000 of orders for regular products and about $900,000,000 in defense orders.

I.C.C. Opposes Bill To Speed Rate Increases

Proposed legislation to provide for prompt railroad rate increases as costs rise and to rewrite the Interstate Commerce Act's rule of rate making is opposed by the Interstate Commerce Commission.

The legislative proposals are embodied in bills—S.2518 and S.2519—which were supported by the railroads at recent hearings before the Senate Committee on Interstate and Foreign Commerce. The commission's opposition was set forth in an April 9 statement which Acting Chairman Aitchison submitted to that committee.

S.2518 would authorize the railroads to make general rate increases effective on 30 days' notice, without suspension by the commission, upon the carriers' certification of their need for the additional revenues. The increases would be subject to investigation and modification by the commission. The new rate-making rule proposed in S.2519 would eliminate the present rule's provision which makes the "effect of rates on the movement of traffic" a matter to be considered by the commission. (*Railway Age* of March 17, page 13.)

The I.C.C.'s opposition statement was addressed principally to S.2518. It did, however, register flat opposition to any rewriting of the rate-making rule, as proposed in S.2519, meanwhile asserting that S.2518 would "effectively repeal" the rule while bringing other results considered undesirable by the commission.

Not Necessary

The commission said it did not think any legislation to expedite rate increases was necessary. At the same time, it presented a proposed substitute for S.2518—jut in case Congress feels "that there should be some statutory rule for the guidance of the commission." It was only "in a spirit of helpfulness to the committee in such a contingency," that the commission drafted the following, which contains "certain safeguards" that the commission considers "essential:"

"Sec. 15b. Whenever it shall appear to the commission that any common carriers subject to any part of this act are about to incur increases in their operating expenses of such size and nature as to render the revenue from their existing rates, fares, or charges insufficient to enable them to provide adequate and efficient transportation service under honest, economical, and efficient management upon a showing of immediate and urgent need for expedited action in the public interest, the commission with or without a hearing and with or without the making of a report may authorize such carriers to file a schedule or schedules making such general increases in their rates, fares, or charges as in its judgment are necessary to enable them to provide adequate and efficient transportation service, subject to such conditions as it may deem desirable. Such schedule or schedules shall take effect not less than 30 days after posting and filing, notwithstanding the existence of any unexpired orders of the commission, and may be in substantially the form which has been generally followed in making general increases in rates, fares, and charges, conformable to rules to be prescribed by the commission for the publication of schedules under this subsection. To the extent necessary to effectuate their establishment, the rates, fares, and charges as increased by the said schedule or schedules may be temporarily relieved from the provisions of section 4 of this part. Such rates, fares, and charges shall not be deemed to have been prescribed by the commission but shall be subject to investigation by it upon complaint or on its own motion and to such action as, after hearing, it may consider proper under other provisions of this act applying to the determination of lawful rates."

After setting out the foregoing, the commission's presentation went on to say that three of its members were of the view that "no legislation whatsoever should be considered at this time along the line proposed in S.2518." These three commissioners believe that the commission can now "expedite the hearings and determination in advance

rate cases as rapidly as is required by the public interest." The dissenters were not named, but one of them was Commissioner Alldredge; he submitted his "separate views" to the committee.

It was his position that "no change of any kind in the law with respect to the initiation of rates is necessary or desirable; that it is in the interest of both the railroads and the public to subject proposals for general increase . . . to an adeuate pre-examination by the commission . . . and that the commission already has sufficient latitude under the law to adjust its procedure to meet the exigencies of any given situation."

Meanwhile, in Acting Chairman Aitchison's statement, the commission majority had assailed S.2518. It referred to some of the bill's language as "catch-all" phraseology, and said that the proposed new tests for rate increases "would be prods to the imagination of management," in that "they are not only vague but will serve as a sort of 'come on' to ever higher increases in rates."

Bases for Increases

Among the bill's approved bases for rate increases under the certification arrangement would be the railroads' asserted need for revenues which would permit them to "take advantage of technological developments, and advance and improve the art of transportation." That test, the commission said, "would be as indefinite as it is poetic." Other language in the bill would be "so sweeping as in effect to nullify the rate provisions of the act," the commission also said.

A suggestion that the railroads might go in for a bit of deferred maintenance while awaiting authority to increase rates was the commission's answer to contentions that such authorizations have come only after "intolerable" delays.

"Actually," the statement said, "when railroad costs commence to rise unduly in relation to revenues, the railroads can curtail expenditures for maintenance and for many other purposes, and hence can wait longer for a price increase than other industries, a larger proportion of whose expenses are immediate and non-deferable. For example, a railroad can wait for a rate increase, without any permanent ill effects, much longer than a carrier by highway."

Freight Car Loadings

Loadings of revenue freight in the week ended April 12 totaled 690,660 cars, the Association of American Railroads announced on April 17. This was a decrease of 16,482 cars, or 2.3 per cent, compared with the previous week; a decrease of 87,329 cars, or 11.2 per cent, compared with the corresponding week last year; and a decrease of 16,725 cars, or 2.4 per cent, compared with the equivalent 1950 week.

Loadings of revenue freight for the week ended April 5 totaled 707,142 cars; the summary for that week, compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS

For the week ended Saturday, April 5

District	1952	1951	1950
Eastern	125,913	135,976	130,180
Allegheny	147,268	154,700	148,321
Pocahontas	48,789	53,054	63,349
Southern	129,095	131,807	125,912
Northwestern	81,825	83,567	68,501
Central Western	114,390	120,470	108,051
Southwestern	59,862	59,949	55,735
Total Western Districts	256,077	263,986	232,287
Total All Roads	707,142	739,523	700,049
Commodities:			
Grain and grain products	41,828	49,071	39,049
Livestock	7,738	7,717	7,752
Coal	111,212	121,944	157,571
Coke	14,075	14,983	13,333
Forest products	42,354	47,827	37,262
Ore	27,977	21,699	13,559
Merchandise l.c.l.	77,893	82,789	86,836
Miscellaneous	384,065	393,493	344,687
April 5	707,142	739,523	700,049
March 29	725,423	755,435	720,404
March 22	719,921	748,878	717,259
March 15	708,826	745,128	725,534
March 8	714,247	749,522	707,911
Cumulative total 14 weeks	10,045,209	10,233,481	8,824,054

In Canada.—Car loadings for the 10-day period ended March 31 totaled 98,876 cars, compared with 78,941 cars for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada: March 31, 1952	98,876	49,996
Cumulative Totals March 31, 1952	979,627	474,364

Truckers Delay Canadian Oil Agreed Charges

An "agreed charge' rate basis for movement of petroleum and petroleum products by Canadian Railways from points in Saskatchewan to destinations in that and neighboring provinces, which was due to go into effect April 1, has been postponed by order of the Federal Board of Transport Commissioners.

Under the agreement, the Imperial Oil Company would obtain favorable rates in the area, on condition that it move all its petroleum by rail, except for short hauls. Truckers in the province have been protesting the agreed charges, claiming that 1,000 vehicles would be put out of business. In their endeavor to strike down the plan, they have obtained the backing of the president of the Saskatchewan Associated Boards of Trade who was reported in the press as stating that the agreed charge principle of freight rate making is "vicious."

Imperial Oil, on the other hand, released a lengthy statement to the Regina "Leader-Post," April 2, pointing out that the effective date of the agreed charges came with plenty of warning; that similar rates for petroleum have been in effect in Alberta, Ontario and Quebec for the past 12 years; and that in the past two years the railways have hauled less than half the company's refinery products—the rest moving by truck. It expressed doubt that 1,000 trucks would be put out of business by the new rail rates.

Buzzards Bay-Woods Hole Run for N. H. Rail Car

The New Haven shortly will place in service between Buzzards Bay, Mass., and Woods Hole a new type of diesel-electric rail car (*Railway Age*, March 24, page 13), developed by the railroad and the Mack Manufacturing Corporation of Allentown, Pa.

The car is powered by a supercharged 6-cylinder diesel engine; each truck is equipped with two General Electric 55-hp. motors, and wheels are of the rubber insulated type. Forty ft. long and seating 45 people, the car has a maximum speed of approximately 54 m.p.h. It is operated by an engineman and a conductor.

Federal Bureaucracy "Is Greatest Danger"—Norris

Transportation — the "hub" of the nation's economy—offers a sound program and effective leadership to avert the catastrophe of state socialism, Ernest E. Norris, chairman and former president of the Southern, told the Southeast Regional Forum of the Transportation Association of America at Atlanta on April 9.

Declaring that federal bureaucracy represents "the greatest threat of all time" to the institutions of this country and the liberties of its people, Mr. Norris said:

"We have permitted destructive forces to gain such controls over this nation as to threaten its basic institutions on the very threshold of what should be the richest and most rewarding years of its history. These threats to freedom can be summarized as follows:

"The short-range self-interest of enterprise, of labor, and of communities which invites government money and government interference.

"The radicals—the socialistic leaders—

CAR SURPLUSES, SHORTAGES

Average daily freight car surpluses and shortages for the week ended April 12 were announced by the Association of American Railroads on April 17 as follows:

	Surplus	Shortage
Plain Box	3,878	334
Auto Box	325	0
Total Box	4,203	334
Gondola	986	609
Hopper	3,338	184
Covered Hopper	125	13
Stock	2,103	75
Flat	16	535
Refrigerator	6,332	0
Other	524	0
	17,627	1,750

"OUTSTANDING AND INDISPENSABLE" service to the nation brought to 131 railroads special awards from the Reserve Officers Association (*Railway Age*, February 18, page 11). The scrolls are shown here ready for mailing.

the parlor-pinks and the purveyors of communistic propaganda [who] thrive on our failures and capitalize on our differences.

"The federal bureaucracy, nearly 2½ million strong, which moves increasingly into our lives and our freedoms and which dreams up new ideas to take and spend our money. This predatory machine refuses to practice economy in federal expenditures. It resorts to deficit spending in a period of peak production. Through abusive investigations, misuse of regulation, and anti-trust statutes, it throttles initiative and enterprise. It condemns and persecutes monopoly in business, but fosters monopoly in labor. It is, in effect, the greatest monopoly of all—big government. It leads the bewildered people of America, softened by paternalism, down the path of rosy promises, into national bankruptcy.

"America is committed to defend the free world. With the burden of taxation equal to 33 per cent of the national income, with deficit spending again under way, the line between economic freedom and state socialism is thin—very thin indeed.

"That line can only be held by competent and courageous leadership in government and by a program which contemplates a vast partnership within the enterprise system—so organized as to give first consideration to major national trends and their impact upon the welfare of the country as a whole."

Dumaine Tells of Proposed Betterments for New Haven

The New York, New Haven & Hartford is prepared to spend $35,000,000 on capital improvements during the next 10 years, Frederic C. Dumaine, Jr., president, told stockholders at the recent annual meeting in New Haven, Conn. This expenditure, Mr. Dumaine added, would be in addition to yearly purchases of new rolling stock costing between $5,000,000 and $10,000,000. The railroad's financial position and the condition of its equipment warrant such outlays, he said.

New Certificate Denied For Mid-West Air Line

The Civil Aeronautics Board has decided not to renew the operating certificate of Mid-West Airlines, a local service air carrier operating in Minnesota, South Dakota, Nebraska and Iowa. The line's present certificate expires June 30.

Six western railroads had intervened in opposition to renewal of Mid-West's operating authority. The air line is controlled by Purdue Research Foundation, a part of Purdue University. (*Railway Age*, February 25, page 22).

The board estimated that further operation by this air line, even with more modern equipment, would require the federal treasury to contribute more than $4.00 for each $1.00 of commercial revenue. The cost to the government in 1950 was $527,976, or about $11.00 for every $1.00 of commercial revenue, the C.A.B. said.

The six rail lines entered the case after a board examiner recommended renewal of the Mid-West certificate for three years. The railroads charged the air line had the advantage of educational and research endowments, and said its continued operation would seriously affect rail carriers. Mid-West had asked the C.A.B. to extend its operating authority to include Denver, Colo.

Although it found that Mid-West should terminate its operations, the C.A.B. kept open the proceeding. It will study the possibility of other air carriers serving various cities within the area. The board noted in the present report that surface transportation in the Mid-West area is "readily available for making connections with existing air service."

The six railroads that intervened in the Mid-West case were the Chicago, Burlington & Quincy; Chicago & North Western; Chicago, Milwaukee, St. Paul & Pacific; Chicago, Rock Island & Pacific; Chicago, St. Paul, Minneapolis & Omaha, and Union Pacific.

Tariff Study Group Sends Out More Questionnaires

The Railroads' Tariff Research Group has sent out the second, third and fourth of the series of questionnaires whereby it is seeking views of interested parties on ways and means of simplifying and otherwise improving tariffs. The research group was established last year under the chairmanship of Charles S. Baxter.

Questionnaire No. 2 asks one main question and three subsidiary questions. The main question is: What is the best item arrangement for "narrative matter" in tariffs? The subsidiary questions are: Where should the item number be shown? Where should the item caption or subject appear? Is "narrative matter" more easily read and more accurately comprehended if arranged in double columns instead of straight across the page? The term "narrative matter" is used "to describe, generally, rules, regulations and other tariff provisions expressed chiefly in language."

Questionnaire No. 3 asks: In tariffs and routing guides containing extensive lists of origin and destination stations, and in basis tariffs such as "Southern Group Basis" and "National Rate Basis Tariff No. 1," should stations be arranged alphabetically by states or in straight alphabetical order?

Questionnaire No. 4 asks: What matter customarily shown on tariff title pages may more appropriately be omitted entirely or transferred to logical places inside the tariffs?

The research group's guide for processing the questionnaires was issued with Questionnaire No. 1, which was sent out last month. (*Railway Age* of March 31, page 58.)

I.C.C. Denies Hearing Plea In Norfolk Southern Case

The Interstate Commerce Commission has denied a Norfolk Southern petition asking the commission not to hold a "formal hearing" in connection with its investigation of the road's practices."

In a petition filed April 14, the road called the hearing procedure "unprecedented," and asked the commission to substitute a "conference plan

or informal hearing." It also asked for indefinite postponement of a scheduled April 22 public hearing.

The commission denied the request two days later, with this statement: "The nature of the proceeding instituted by the order of investigation and the public interest therein will not permit conducting the investigation through conferences and negotiations."

This investigation into the "management, accounting, financial and other practices" of the N.S. was instituted last January on the commission's own motion. (*Railway Age*, January 28, page 17).

The road told the commission in this latest petition that "adjustments" have been made since January. Complaints that remain, if any, over which the commission has jurisdiction, can best be adjusted through conferences between representatives of the commission and respondents, the road said.

Meanwhile, the commission had already denied an earlier petition in which the road asked for a more precise explanation of the issues involved in the investigation.

The road said the commission's statement of the issues was so "vague, indefinite and uncertain" that the defendent would be unable to prepare a defense. It asked for more information and particulars.

The commission denied this petition with the statement that "all the information and particulars requested ... are, or should be, in the records required by law to be kept and maintained by the respondents."

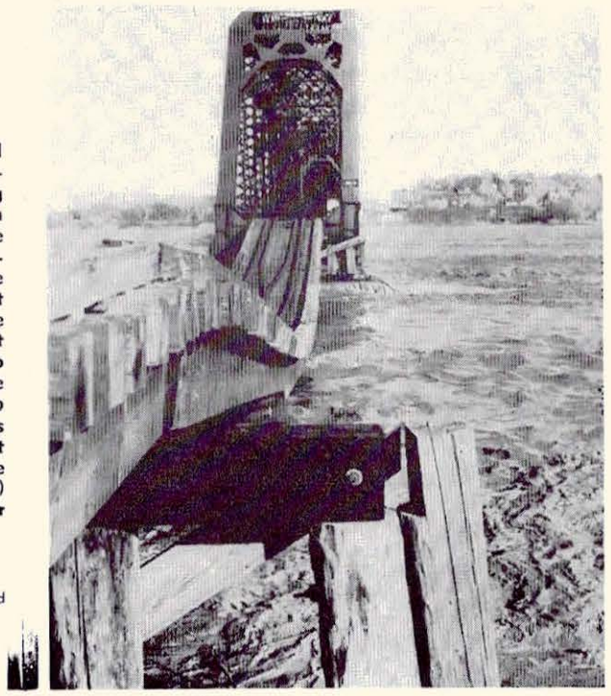
Argument Date Set In "Divisions" Cases

The Interstate Commerce Commission has set May 21 as the date for oral argument in the two "divisions" cases—No. 29885, Divisions of Joint Rates between Official and Southern Territories, and No. 29886, Official-Southwestern Divisions. The argument will be before the full commission, at Washington, D. C.

Record Floods Effect on Rail Service Negligible

A combination of quick spring thaws and simultaneous rains have brought record floods to the Missouri and Mississippi Valleys. As of press time for this issue, the waters had surprisingly little effect on railroad services of the area. Although quite a number of yards and several important main routes have been flooded out, diversion of both freight and passenger trains to other lines—often that of a competitor—kept traffic moving with a minimum of delays.

As the Mississippi's crest passed the Twin Cities and moved toward the river towns of LaCrosse, Wis., and Winona, Minn., the Burlington and the Milwaukee pressed all available steam locomotives into service to "wade" trains through low spots on their lines south of St. Paul. The Milwaukee's line between St. Paul and Minneapolis was entirely out of service and all trains were detouring via the Great Northern's line, with steam power in most instances.



A FLOOD TOLL EVEN HIGHER than that experienced last spring appears to be a grim certainty in both the Missouri and Mississippi valleys. Here the Missouri has washed out the approach to the Milwaukee's bridge at Chamberlain, S. D. To the north along the same river, the Chicago & North Western was flooded out of its Fort Pierre yards (opposite the capital cty of Pierre) by waters more than four feet deep.

Wide World

The Milwaukee's bridge over the Missouri at Chamberlain, S. D. (pictured above on this page) was reported almost ready for service again on April 17. The North Western's yards and line at Pierre, S. D. were already restored to service.

With the crest of the Mississippi expected at Council Bluffs, Iowa, and Omaha, Neb., on April 17, the North Western gave permission to army engineers to throw up a "second line of defense" dike across the main line and yards, although no water had reached the area. The North Western rerouted all its trains via other roads and kept service running with only minor delays. As the dike was being erected, the road removed all rolling stock and much yard equipment from the area. Other roads cleared their low-lying yards along both rivers "of everything—right down to the last typewriter."

Condemned box cars stored by the North Western at Clinton, Iowa, were pressed into service to store furniture removed from homes in low-lying parts of the city. Once loaded, the road moved the cars to higher ground to wait passage of the crest.

At Sioux City, local operating officers of the Burlington set up an emergency evacuation "commuter" train to carry on service between the city and South Sioux City, Neb., on the opposite bank, after the only highway bridge was washed out. Service was maintained until the river began to damage the roadbed. The Burlington has no regular passenger service at Sioux City.

Because the city of Council Bluffs is dependent on water furnished by the city of Omaha, and because it was feared that the water might become contaminated by seepage, the Chicago & North Western located a case of chlorine in Boone, Iowa—about 120-mi. distant— and rushed it to the scene.

Passenger services were subject to some delay and in a few instances double "stub" service was resorted to where river crossings were blocked. Actual diversions varied from day to day as conditions changed at key junction points. But there was surprising little disruption of important services, considering the magnitude of the disaster.

U. S. Chamber Committee Analyzes Transport Taxes

Evans A. Nash, director of the Chamber of Commerce of the United States and chairman of its Transportation and Communication Committee, has advised the transportation industry that it "can help to put our economy on solid ground . . . by pledging not to support requests for federal funds for

MORE NEWS ON PAGES 74-88

Additional news appears on page 74, with regular news departments beginning on the following pages:

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Car Service	**74**
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GROTZ SUCCEEDS WILLIAMS ON WESTERN MARYLAND

W. Arthur Grotz, vice-president of the railroad department of the Chase National Bank of New York, has been elected president of the Western Maryland, to succeed Eugene S. Williams, who has held that position since January 1, 1948. Mr. Williams, who is also chairman of the railroad's board of directors, will continue in that position.

unwarranted projects or for projects that can be handled by the states or private industry."

Mr. Nash's statement was reported in an April 15 press release which called attention to "the stake of America's transportation industry in the program for economy in government" that is being promoted by the Chamber. "The estimated 1951 transportation tax load of $2.5 billion, which includes $644 million for the federal transportation excise tax, was more than twice the year's net income of $1.2 billion for the industry," the Chamber added. It went on to say that "Class I rails last year grossed approximately $10 billion, but the net shrank to $693 million, a ratio of more than 14 to 1."

Among "direct methods by which the transport industry can help cut the budget," Mr. Nash listed the following:

"1. Hold highway federal aid to $400 million per year for the next two years and do not support the $550 million recommended by the House Public Works Committee. The Chamber favors bigger and better highways but believes their financing is primarily a state responsibility.

"2. Restrict airport federal aid to projects of the highest priority and urge development of more non-aviation revenue sources at airports to help pay airport costs whenever possible. . . .

"3. Urge passage of S.2742 to require the prompt sale of the Federal Barge Lines, which has cost the nation's taxpayers millions of dollars.

"4. Oppose unnecessary and costly river and harbor projects that annually consume hundreds of millions of dollars. . . .

"5. Urge less and more streamlined regulation of transportation."

EQUIPMENT AND SUPPLIES

FREIGHT CARS

The **Seaboard Air Line** has begun construction of 400 50-ton low-side gondola cars in its Portsmouth, Va., shops at an estimated cost of $1,319,000. The cars are being built on an assembly line basis from prefabricated parts and are entirely new except for the trucks, which have been taken from retired gondola cars.

SIGNALING

The **Duluth, Missabe & Iron Range** will install a remote control relay interlocking plant at Duluth, Minn.; equipment has been ordered from the General Railway Signal Company.

The **St. Louis-San Francisco** is to install centralized traffic control on approximately 83 miles of single track between Amory, Miss., and Jasper, Ala.; material has been ordered from the Union Switch & Signal Division of the Westinghouse Air Brake Company. The style C control machine will be installed at Amory. In addition to code and carrier equipment, the order includes styles H-2 high searchlight signals, N-2 dwarf color-light signals, M-23A dual-control electric switch machines, SL-6A electric switch locks, relays, transformers and switch circuit controllers. Field installation will be handled by railroad forces.

IRON & STEEL

The **Central of New Jersey** has ordered 1,165 tons of rail from the Bethlehem Steel Company.

SUPPLY TRADE

The Industrial division of **Gould-National Batteries, Inc.,** Trenton, N. J., has reorganized its sales forces in eastern, midwestern and Pacific territories. The move involves creation of regional managerships in Pittsburgh and Detroit, appointment of a coordinator of sales and a manager of headquarters sales, and promotion and reassignment of several field sales executives. **F. A. Miller,** former New York regional sales manager, has been appointed coordinator of sales at the Trenton headquarters, and **Frank Keenan,** of the headquarters sales staff, has been promoted to its managership. Pittsburgh and Detroit territories, hitherto administered by the Cleveland regional office, will become bases for regional sales offices on May 1. **O. W. Rider,** former Cleveland district manager, will become regional manager at Pittsburgh, and **John P. Kelly,** Philadelphia representative, will manage the Detroit regional office. **Malcolm Janis,** New York representative specializing in telephone, alarm system and control type batteries, has been appointed New York regional manager. **Stanley J. Mahurin,** Denver area representative, has been appointed San Francisco district manager.

Roy Augustson, who has been appointed personnel manager of the Pullman Car works of the Pullman-Standard Car Manufacturing Company at Chicago. Mr. Auguston was former personnel and safety director of the Great Lakes plant, American Forge division, American Brake Shoe Company.

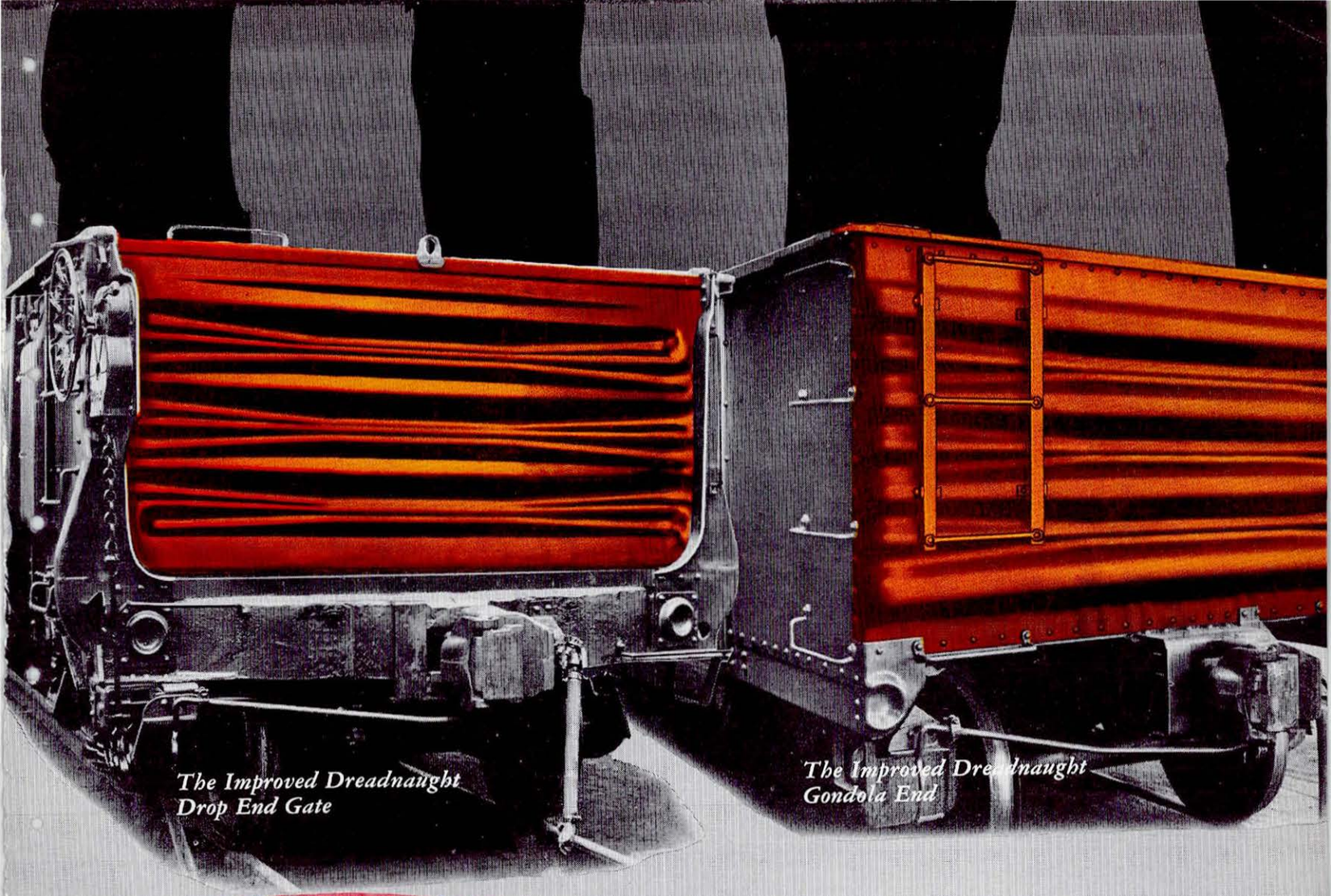
Fred W. Alger, assistant vice-president of the Pullman-Standard Car Manufacturing Company, who has been promoted to the Birmingham (Ala.) sales office, where he will be associated with the Southern district sales vice-president.

The **American Hoist & Derrick Co.** has moved its New York district office from 50 Church street, New York, to the foot of Jacobus avenue, South Kearny, N. J.

The **United States Thermo Control Company** has announced formation of a subsidiary, the **Thermo-King Railway Corporation,** to handle railway sales of its automatic car refrigerating systems. The subsidiary will have offices at 80 East Jackson boulevard, Chicago 4, under direction of Vice-president **Samuel MacClurkan.**

Operations in the **Dixie Cup Company's** new 100,000-sq. ft. plant in Anaheim, Cal., are scheduled to start this month. The new plant is a one-story production unit representing an investment in plant and machinery of over $1,000,000, and brings the number of the firm's plants to six. The company also reports that expansion continues in existing plants elsewhere in the country.

(Continued on page 74)



Standard

There are no better ends for gondola cars.

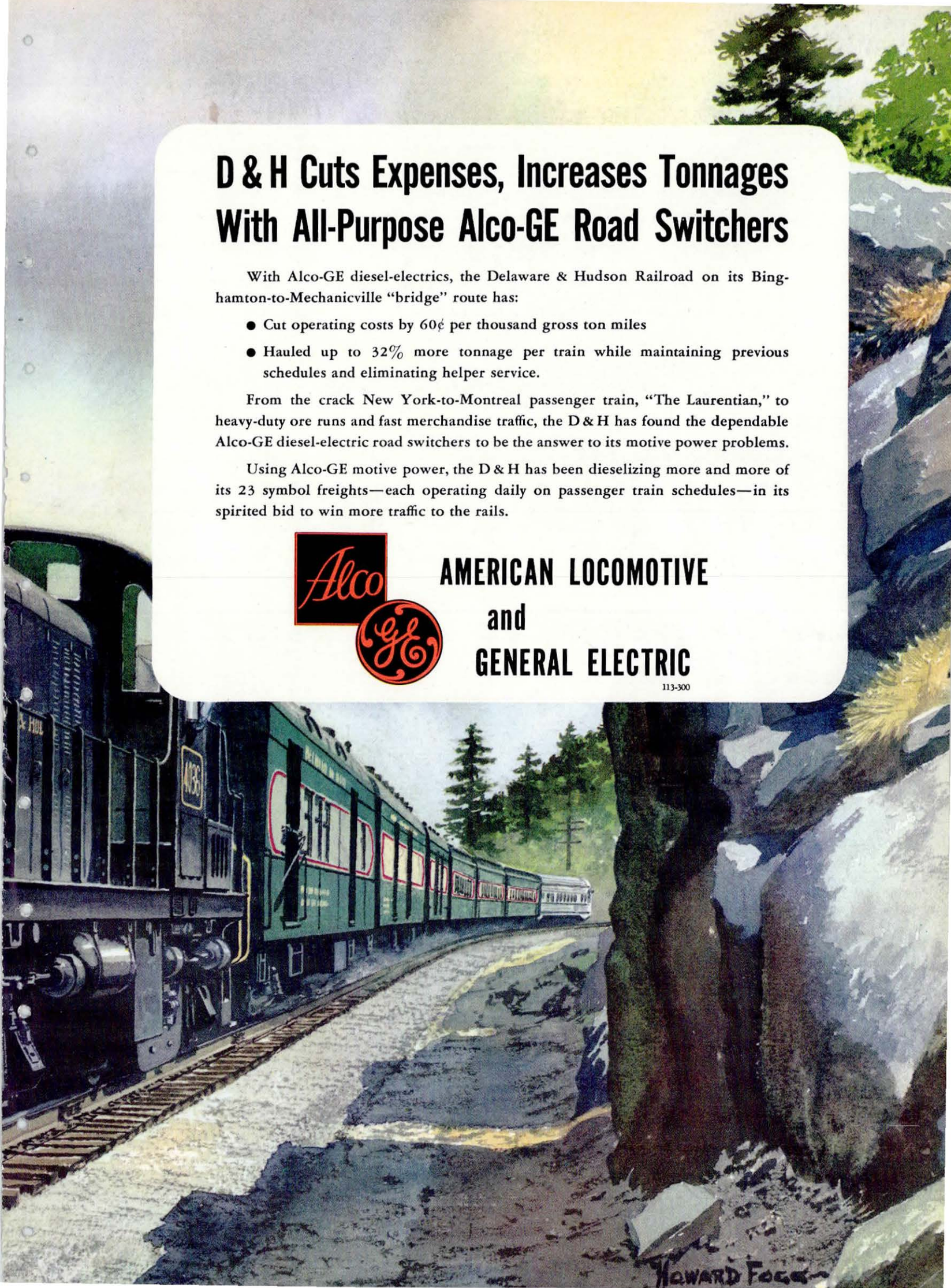
Standard RAILWAY EQUIPMENT MANUFACTURING COMPANY

310 SOUTH MICHIGAN AVENUE, CHICAGO 4 • 247 PARK AVENUE, NEW YORK

HOBART BUILDING, SAN FRANCISCO • FIRST NATIONAL BANK BUILDING, ST. PAUL

THE WORLD'S LARGEST FABRICATOR OF RAILWAY CAR SPECIALTIES

4036



D & H Cuts Expenses, Increases Tonnages With All-Purpose Alco-GE Road Switchers

With Alco-GE diesel-electrics, the Delaware & Hudson Railroad on its Binghamton-to-Mechanicville "bridge" route has:

- Cut operating costs by 60¢ per thousand gross ton miles
- Hauled up to 32% more tonnage per train while maintaining previous schedules and eliminating helper service.

From the crack New York-to-Montreal passenger train, "The Laurentian," to heavy-duty ore runs and fast merchandise traffic, the D & H has found the dependable Alco-GE diesel-electric road switchers to be the answer to its motive power problems.

Using Alco-GE motive power, the D & H has been dieselizing more and more of its 23 symbol freights—each operating daily on passenger train schedules—in its spirited bid to win more traffic to the rails.

Alco GE

AMERICAN LOCOMOTIVE and GENERAL ELECTRIC

113-300

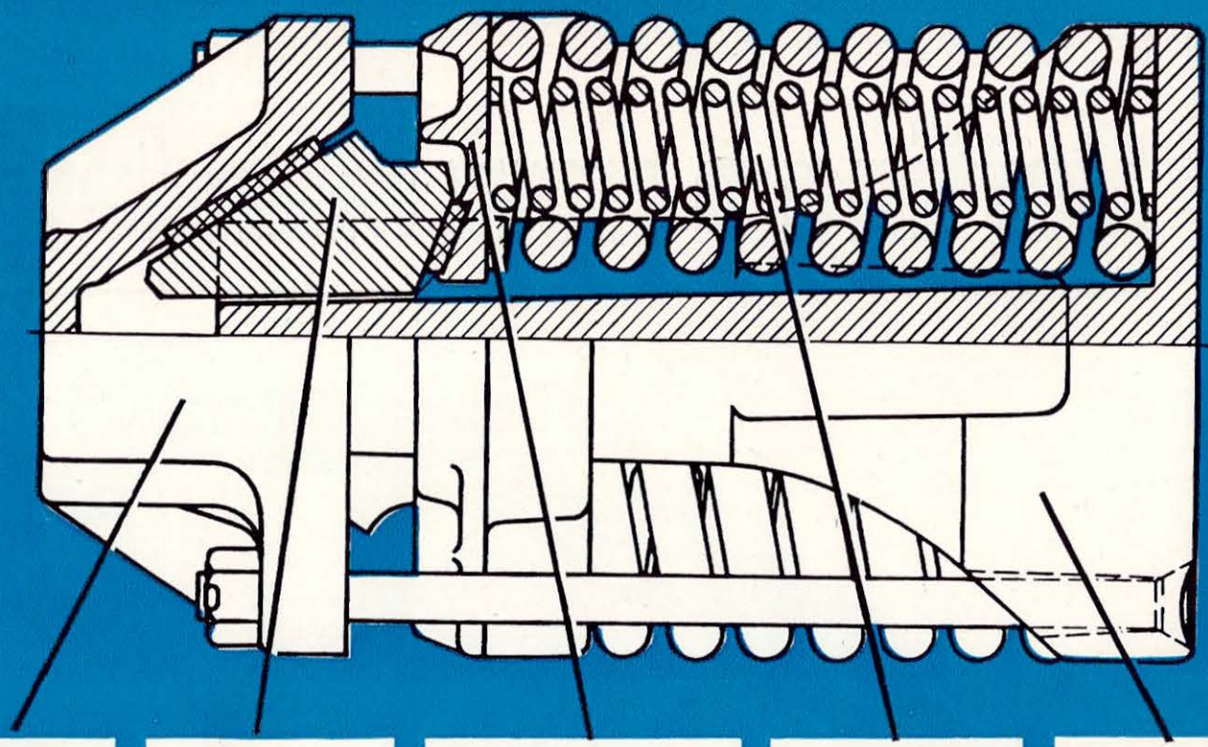
Always an operating hazard—and a constant drain on the maintenance budget—rust is a doubly dangerous enemy now when it is difficult to obtain metal replacements.

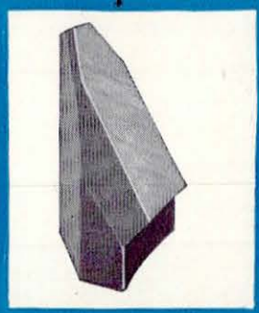
RUST-OLEUM stops rust effectively—is the practical answer to many railroad rust problems. Its tough, pliable, rust-resisting film gives excellent protection to bridges, rolling stock, metal buildings, signal equipment, tanks and many other rustable metal surfaces.

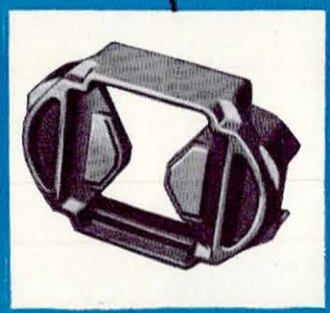
CUT YOUR MAINTENANCE COSTS

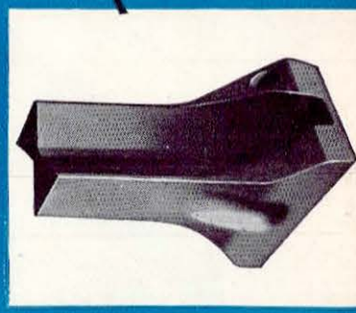
RUST-OLEUM cuts maintenance costs in two ways. (1) It prevents rust on new rustable metal surfaces so that costly replacements can be deferred longer than previously could be expected. (2) Because RUST-OLEUM can be applied *even* over metal already rusted—usually without sandblasting or the use of chemical rust removers—it saves many, many man hours. *Write for your copy of the NEW RUST-OLEUM Railroad Catalog.*

RUST-OLEUM CORPORATION
2597 Oakton Street, Evanston, Illinois









Why the National M-17-A is outstanding!

...Report No. 950 on AAR Five and Twelve Year Tests

● Our Report No. 950 (taken from Circular No. DV-1215, Annual Report of the AAR Committee on Couplers and Draft Gears) gives in detail some of the success of the National M-17-A Friction Draft Gear. A brief summary of the AAR Committee's conclusions shows how this gear gives outstanding performance in providing maximum car protection.

The report points out that in both the five and twelve year tests "externally these gears appeared in good shape... internally there was no detectable wear... the wedging surfaces were all nicely polished... friction surfaces all had nearly 100% contact and all surfaces were fairly straight."

And the report shows that after twelve years of service, the average capacity of the gears tested was still 37% above the AAR minimum of 18,000 foot-pounds required of new gears.

The National M-17-A gear stood up well on these tests because of its rugged design of inwardly acting wedge pressure against a centrally located friction member. Alloy steel castings with machined, ground and hardened friction surfaces assure accurate fit and long wear life.

A-3938

Write today for your copy of Report Number 950 on AAR five and twelve year tests: **National Malleable & Steel Castings Company, 10600 Quincy Avenue, Cleveland 6, Ohio.**

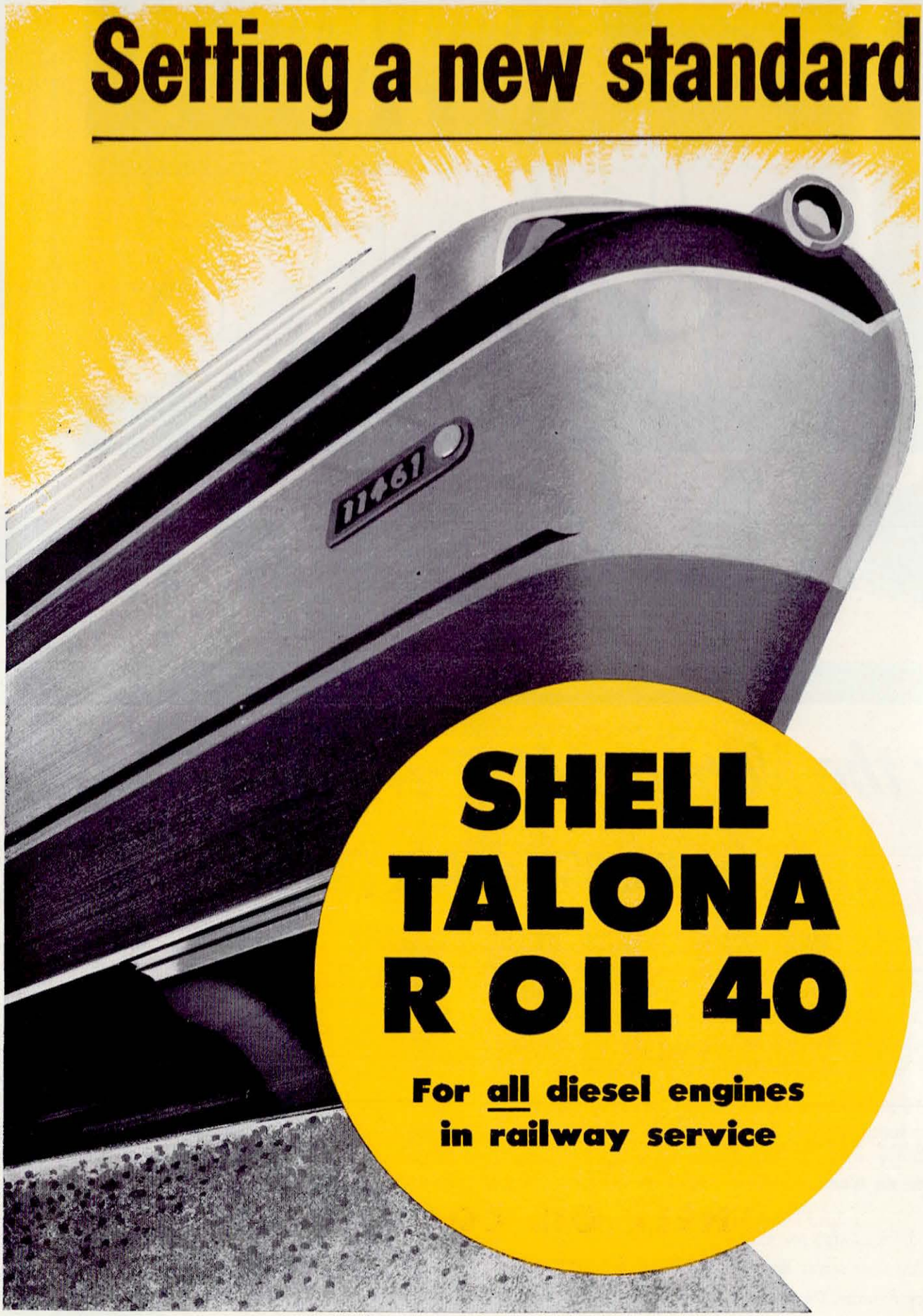
NATIONAL Products FOR TRANSPORTATION AND INDUSTRY

Est. 1868

NATIONAL MALLEABLE and STEEL CASTINGS COMPANY

COUPLERS ● TRUCKS ● YOKES ● DRAFT GEARS ● JOURNAL BOXES AND LIDS

Setting a new standard



SHELL TALONA R OIL 40

For all diesel engines in railway service

for anti-wear performance

An advance in railroad diesel lubrication that rivals the discovery of anti-sludge compounds!

SHELL TALONA R OIL 40 combats the main causes of diesel engine wear so successfully that accepted wear standards must now be revised. *This gain is achieved without sacrifice of any basic lubricating function.*

Especially favorable is the wear reduction at the critical top-cylinder zone. By maintaining original cylinder-wall and piston-ring dimensions longer, engine efficiency stays at a high level and crankcase contamination is greatly reduced.

Investigate the anti-wear advantages of Shell Talona R Oil 40 for *your own* diesel units.

SHELL OIL COMPANY

50 WEST 50TH STREET, NEW YORK 20, NEW YORK
100 BUSH STREET, SAN FRANCISCO 6, CALIFORNIA
SHELL BUILDING, ST. LOUIS 3, MISSOURI

SHELL®

For every Location on the Line...

Automatic Electric HANDSETS

type 27-A

Handset for Noisy Locations Pushbutton control raises reception level 12 db above normal, and reduces sidetone. Ideal for shops, or wherever surrounding noise makes reception difficult.

type 27-B

Handset for the Hard-of-Hearing Same as the Type 27-A, but equipped with a special pushbutton by which the 12 db higher voice reception can be *locked in position*. Does not interfere with normal reception.

type 25

Standard Railroad Dispatcher's Handset Pressing button places resistor in series with receiver, increasing transmitter output while *talking*. Voice goes through clear and strong.

type 25

Anti-Noise Handset A modification of the standard Type 25 (above); pressing button short-circuits *transmitter*, eliminating surrounding noises while *listening*. Gives a quieter circuit.

type 25

For Auxiliary Functions This model of the Type 25 uses the pushbutton for operations entirely separate from the handset—for example, to cut in an amplifier before transmitting.

type 22

Sound Powered Handsets Powered entirely by the sound of the voice; no separate power supply is required. Sound powered handsets are ideal for field telephones, for track crews, or at freight docks.

Railroad men *like* these handsets—like the way they feel, and the way they "talk up." Used in Automatic Electric Railroad Monophones, these handsets solve many tough problems in railroad communication!

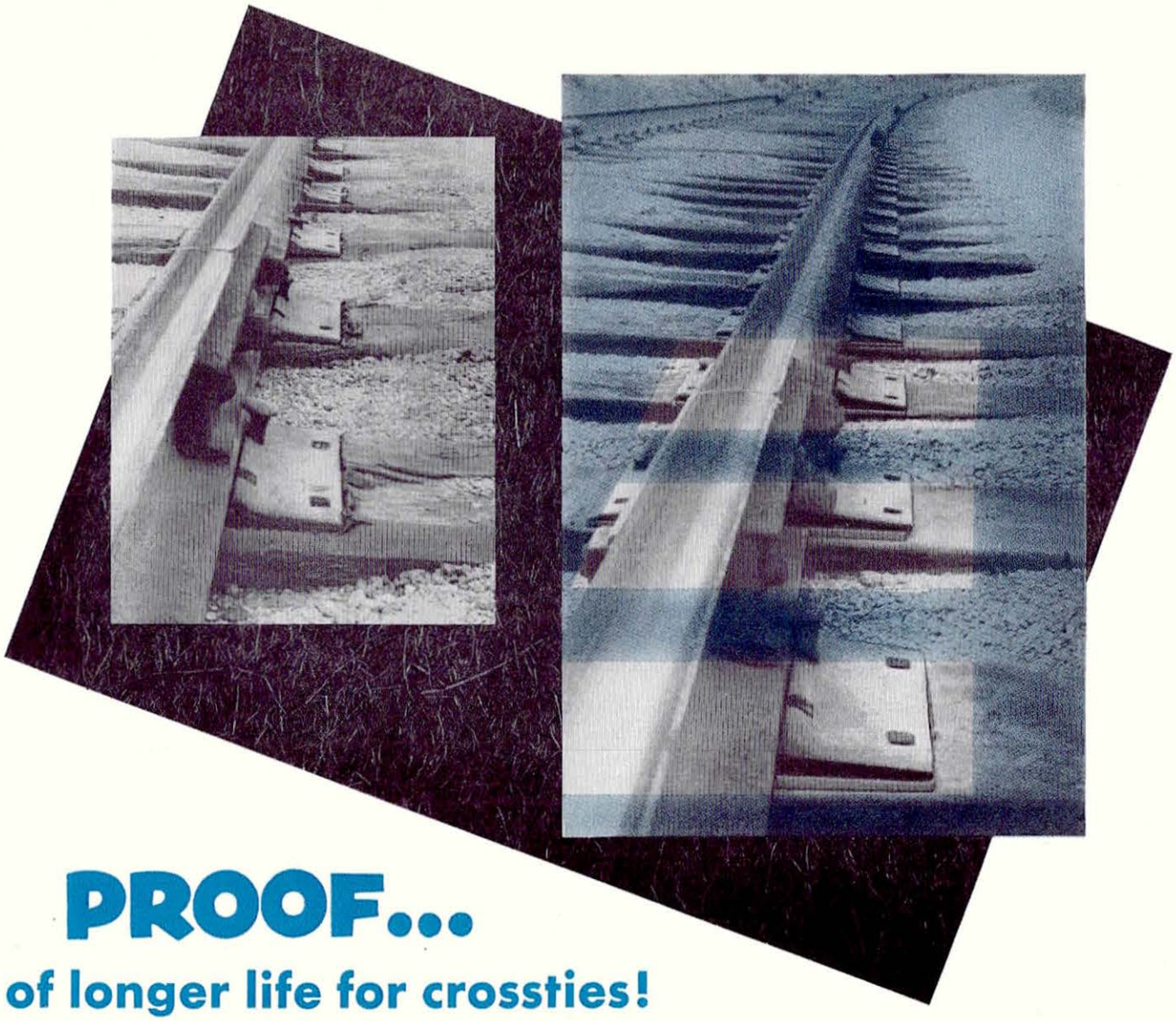
"Bad reception" complaints, for example, can often be traced to faulty instruments at one or both ends of the circuit. When that happens, you can generally cure the trouble in just a few minutes, by installing Automatic Electric Monophones with handsets of the proper type.

It's easy to get the proper type, too—for Automatic Electric makes an exceptionally wide variety of handsets for use with Monophones. Just standardize on Automatic Electric Monophones, and you'll have *your choice* of handsets for every location!

AUTOMATIC ELECTRIC

Makers of Telephone, Signaling and Communication Apparatus...Electrical Engineers, Designers and Consultants

Distributors in U.S. and Possessions:
Automatic Electric Sales Corporation...1033 West Van Buren Street, Chicago 7, U.S.A.
In Canada: Automatic Electric (Canada) Limited...284 King Street West, Toronto, Ontario



PROOF...
of longer life for crossties!

The pictures tell the story! After only a year of heavy mainline traffic, the ties on the left are broken and battered. The others are still like new. The reason? They're protected with tie pads made of wiry abaca fibers compounded under pressure with VINYLITE Brand Resins.

These tough, rugged tie pads guard against the cutting action of the tie plates—even when small plates are used. They fit the tie surface so closely that sand and cinders can't work underneath to cause abrasion. Spikes are driven right through solid pad, so the pads can't shift or work loose. Pads, plates, rails and spikes all stay tight and firm.

Tie pads embodying VINYLITE Resins are highly resistant to all the usual roadbed hazards—weather, brine, oil, acid, alkali, fungus, vermin, and insects. They don't flatten or disintegrate—won't soften in extreme heat or get brittle with cold. They are uniformly strong throughout. On several large railroads, they've repaid their cost over and over again through savings in tie life, tamping, regauging and the use of smaller plates.

For more information on tie pads embodying VINYLITE Brand Resins, write Dept. NC-73.

Data on the tie pads by
Railroad Tie Pad Division,
F. Burkart Mfg. Co., 4900 No. 2nd St.,
St. Louis 7, Mo.

Eight years' experience with these tie pads on ballasted track by F. Burkart Mfg. Co., has resulted in their compilation of the following estimates which they feel are conservative.

Tie installation reduced 30%
Track tamping reduced 20%
Track gauging reduced 50%

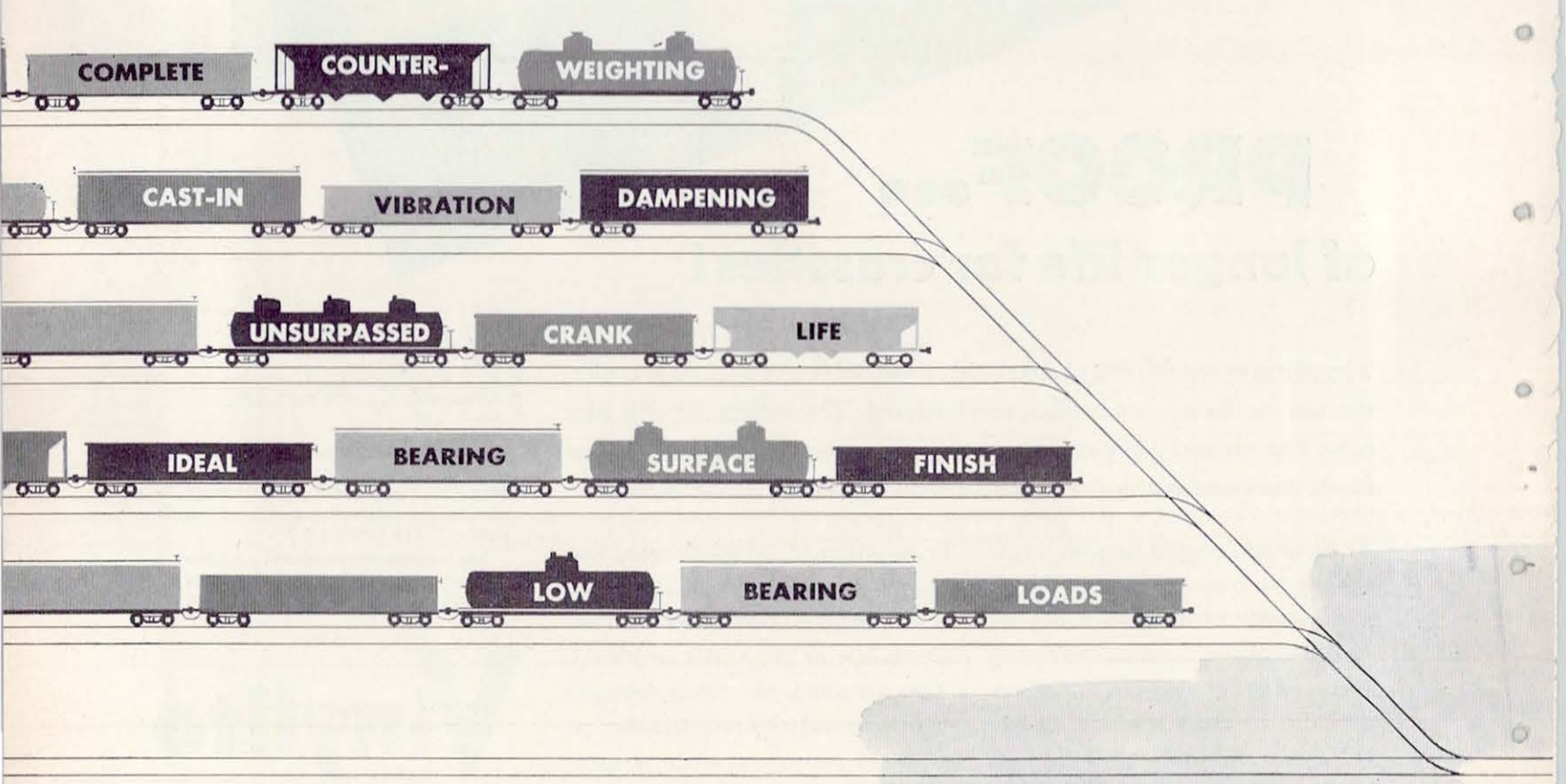
Vinylite
BRAND
RESINS

TRADE MARK

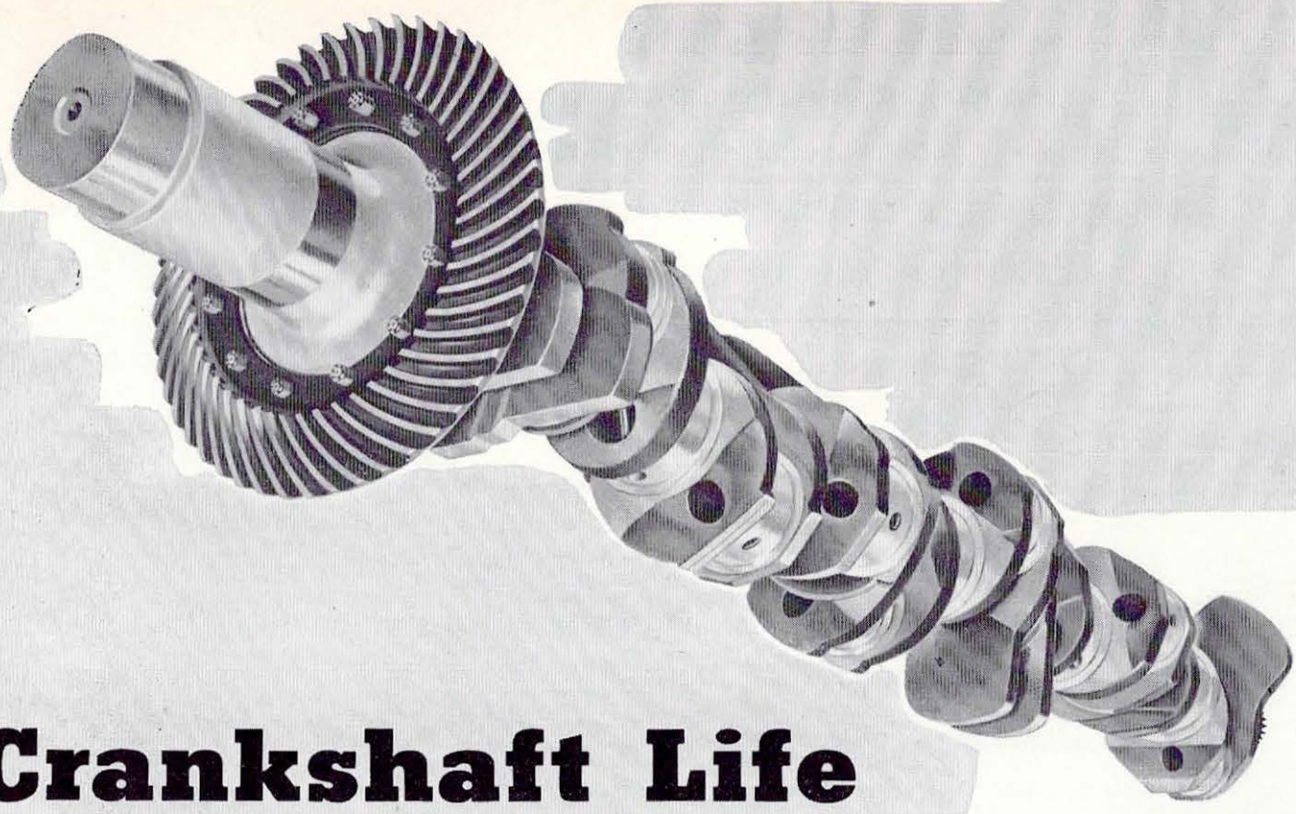
BAKELITE COMPANY
A Division of
Union Carbide and Carbon Corporation
30 East 42nd Street, New York 17, N. Y.

. . . JUST ONE OF THE REASONS
WHY THERE'S OVER A MILLION
OPPOSED-PISTON HORSEPOWER
ON THE RAILS TODAY!

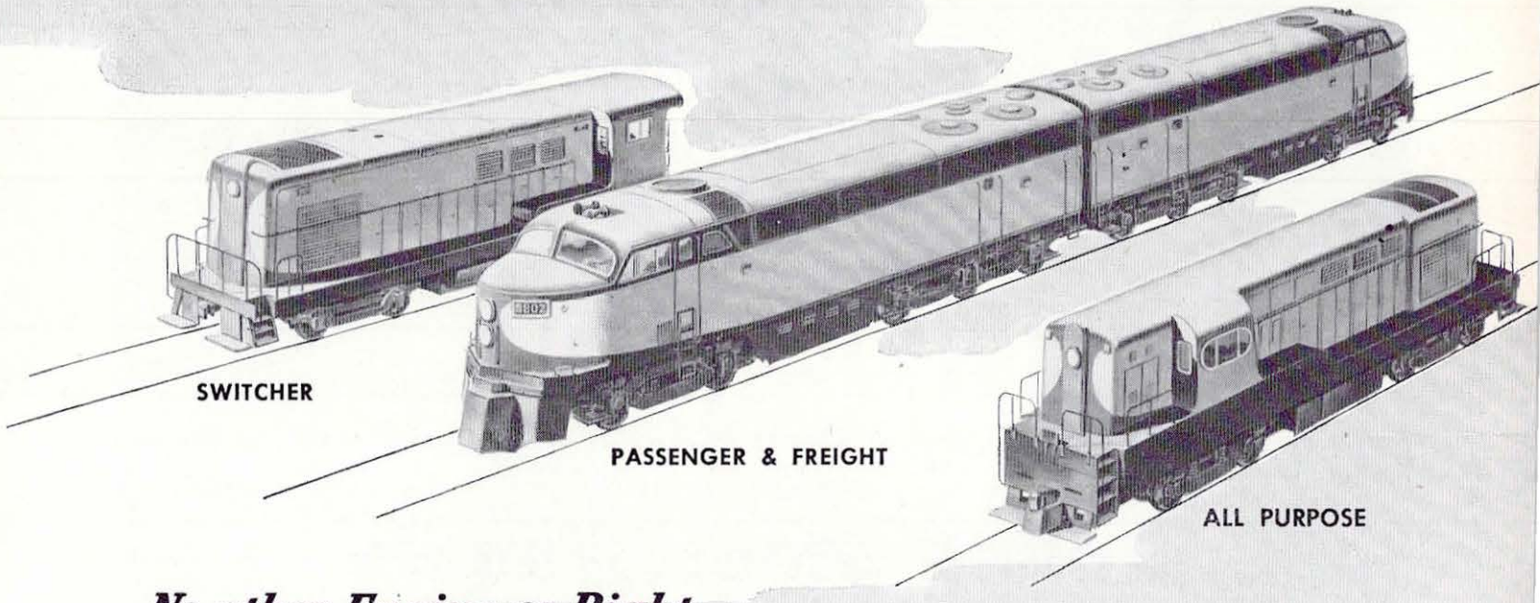
Cast Alloy Crankshafts ... Longer



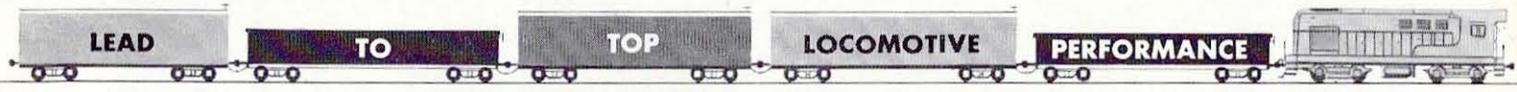
...only FAIRBANKS-MORSE offers



Crankshaft Life



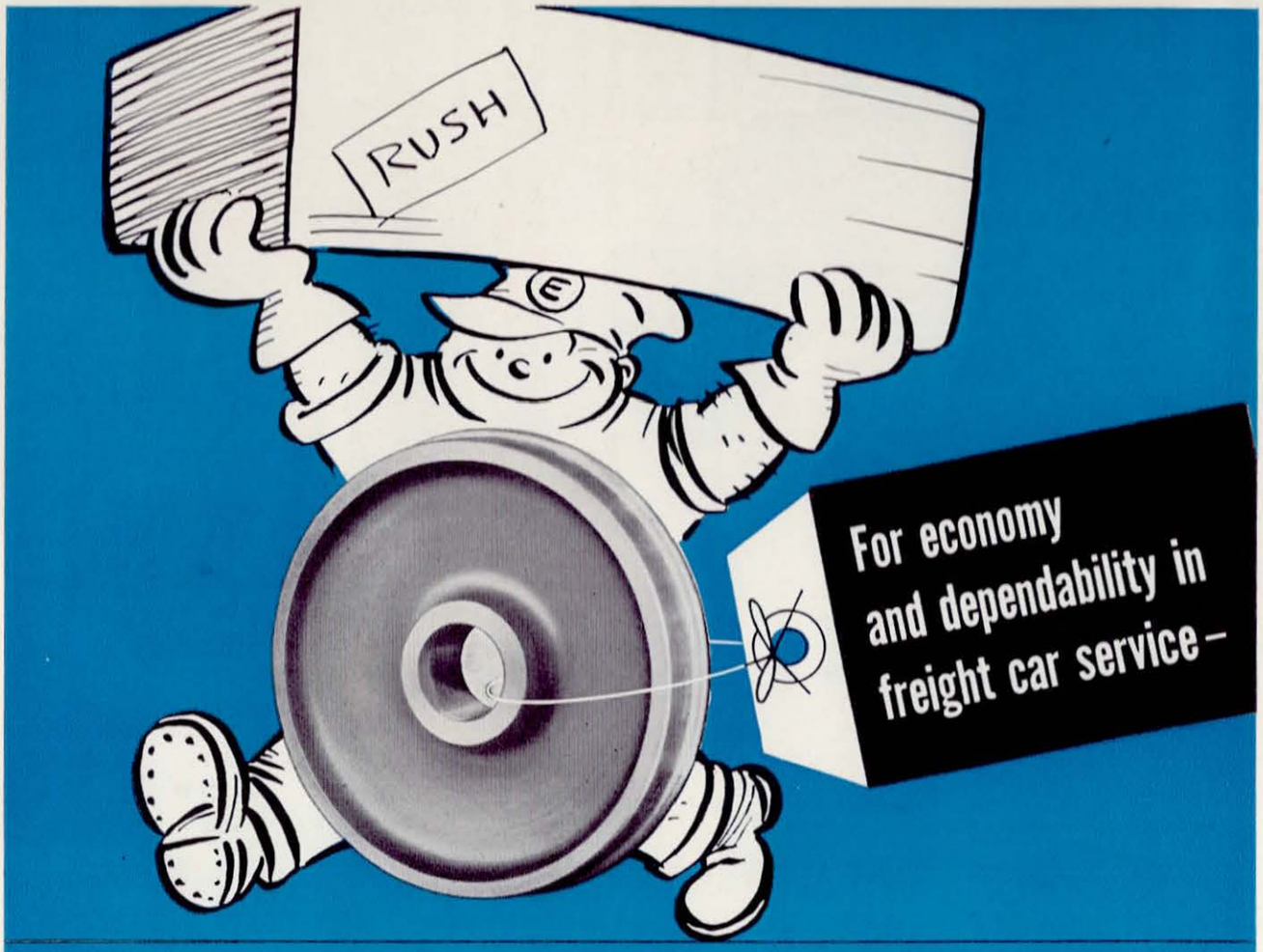
No other Engine so Right
for all classes of Railroad Service!



Opposed-Piston Horsepower!

FAIRBANKS-MORSE, *a name worth remembering*

DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL MACHINERY • PUMPS • SCALES
HOME WATER SERVICE EQUIPMENT • RAIL CARS • FARM MACHINERY • MAGNETOS



specify **Edgewater**

Rolled Steel Wheels

Single wear wheels rolled from
special steel made in our own plant

E Edgewater Steel Company

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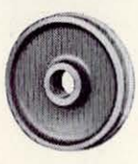
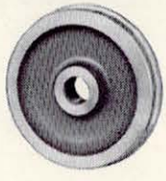
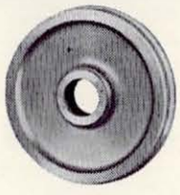
Makers of  Freight Car  Passenger Car  and Diesel Locomotive
Rolled Steel Wheels

BRIDGE MODERNIZATION AT CAIRO

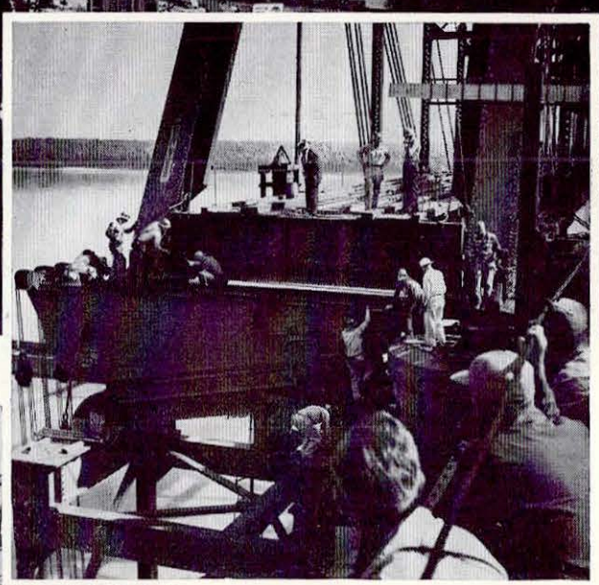
SYMBOL OF ILLINOIS CENTRAL'S PROGRESSIVE SERVICE

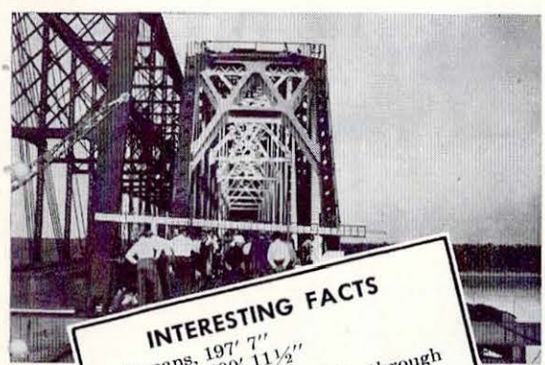
● The year will see the completion of a new steel superstructure for the Illinois Central's bridge over the Ohio River at Cairo, Illinois.

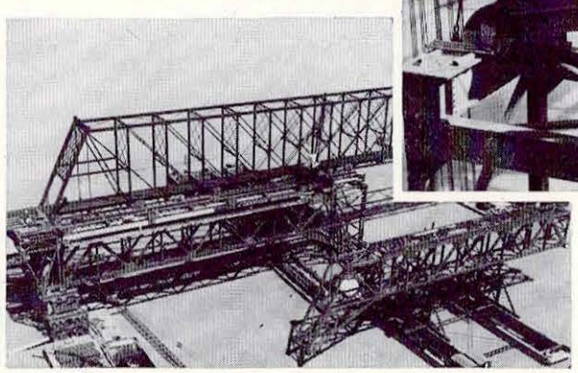
Twelve modern spans will replace a 61 year old, nine span structure, to accommodate today's heavier, faster traffic. American Bridge, because of its skill, know-how and wide experience, was the logical choice to perform the major construction feat of building the new superstructure on the original piers with a minimum interruption in traffic.

The first old span of the bridge was rolled off its piers onto temporary falsework and the new 518-foot, 1,700-ton span moved into position and opened to service after a traffic interruption of only 20 hours! Then the old span was launched like a ship into the river 100 feet below for easy removal.

While this is the first time this procedure has been used on a job of such magnitude, it is a typical example of the part American Bridge is playing to help our vital railroad systems meet the needs of growing America.







INTERESTING FACTS

- 6 spans, 197′ 7″
- 4 spans, 400′ 11½″
- 2 spans, 518′ 11″
- Bridge was single track, through truss. Steel used, 10,000 tons.
- Erecting procedure: Illinois Central R. R. and American Bridge.
- Consulting Engineers: Modjeski and Masters.

FOOT BY FOOT the old span, 60-ft. high and weighing 1,100 tons, is rolled over to rest on launching sleds atop temporary falsework. From this position it was launched into the Ohio 100 ft. below. **LEFT:** Falsework span No. 2 erected complete and jacked to elevation prior to floating. FAR LEFT: New span rolls into position four hours after movement started.

AMERICAN BRIDGE DIVISION, UNITED STATES STEEL COMPANY

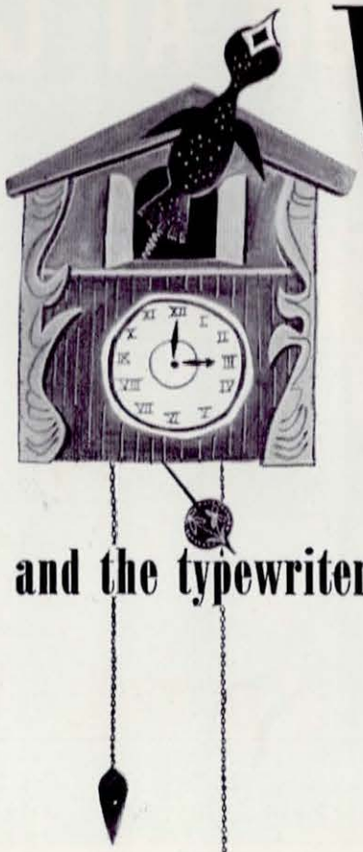
GENERAL OFFICES: 525 WILLIAM PENN PLACE, PITTSBURGH, PA. Contracting Offices in: AMBRIDGE · ATLANTA · BALTIMORE BIRMINGHAM · BOSTON · CHICAGO · CINCINNATI · CLEVELAND · DALLAS · DENVER · DETROIT · DULUTH · ELMIRA · GARY · MEMPHIS MINNEAPOLIS · NEW YORK · PHILADELPHIA · PITTSBURGH · PORTLAND, ORE. · ROANOKE · ST. LOUIS · SAN FRANCISCO · TRENTON

UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS TRADE MARK

AMERICAN BRIDGE

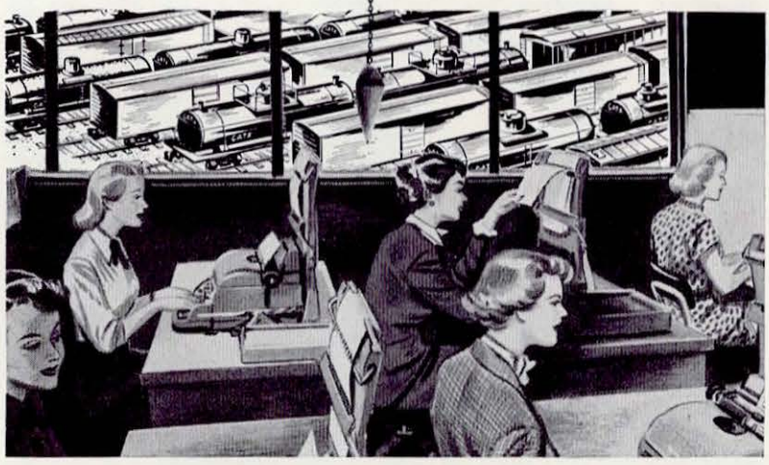
UNITED STATES STEEL



Where time and production count... typing is *electric* and the typewriter... is the REMINGTON *Electri-conomy*

Yes, along with other essential industries, American Railroads have discovered that Remington Electri-conomy Typewriters can turn out *more work*, *better work* in *less time* and with *less effort* . . . all with amazing electric ease of operation.

So why not turn to the Electri-conomy to meet *your* needs in these times when greater individual productivity and time schedules are SO important. It's the key to better performance . . .



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Mail the coupon below for the amazing Electri-conomy story.

Remington Rand INC.

THE FIRST NAME IN TYPEWRITERS

Remington Rand, Room 2056 315 Fourth Avenue, New York 10

☐ Yes, I would like a FREE copy of "Take A Letter" (RE 8499) describing the new Electri-conomy.

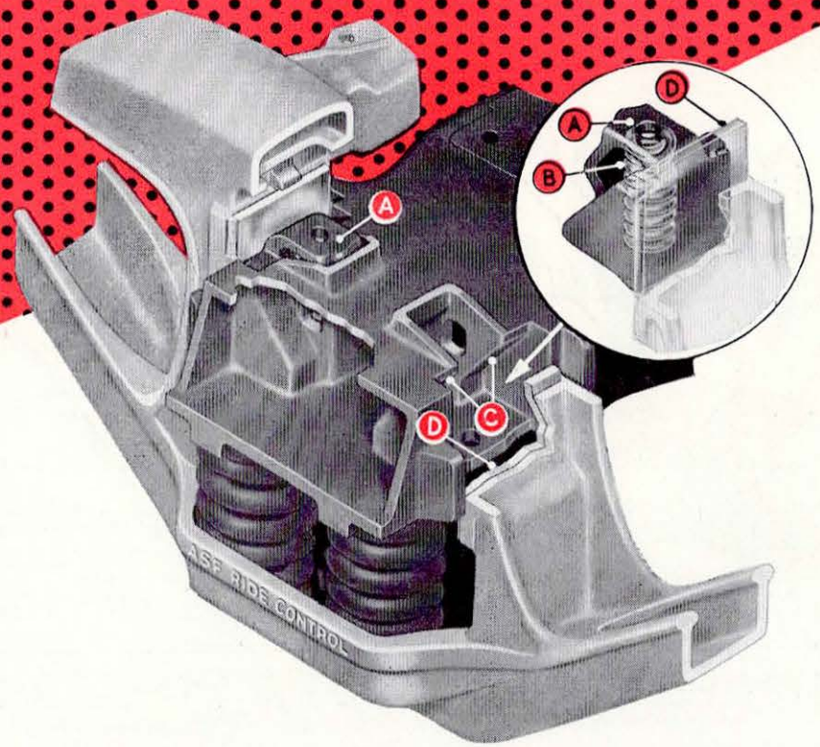
☐ I would like FREE Electri-conomy Test in my office—without obligation of course.

Name_____

Company_____

Address_____

City_____ **Zone**_____ **State**_____



FRICTION CONTROL

that never lets up!

Shown above is one of the simplest, yet most ingenious devices you have ever seen! Each Ride-Control bolster end has two friction shoes (A) into which are fitted pre-compressed friction springs (B). These springs force the shoes upward, along the inclined surfaces (C), and outward, *with constant pressure*, against the opposing hardened friction surfaces (D). That's it!

No matter how much the bolster load varies or the truck springs move, the friction pressure never changes. The right amount of *control* is always there. This permits the use of long-travel springs. They're softer. They absorb more impact. And, with Ride-Control, their cushioning qualities are not interfered with because so little shoe pressure is required.

You know that in railroading a sturdy, simple device means long, satisfactory service and low maintenance costs. Today 300,000 car sets of Ride-Control Trucks in service are proving these last two vital points for *you*, as they provide load-protecting, road-protecting, smoother rides!

AMERICAN STEEL FOUNDRIES
410 N. Michigan Avenue, Chicago 11, Illinois
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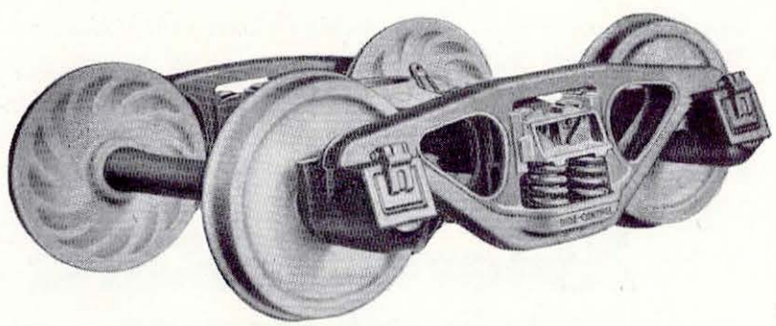
Canadian Sales: International Equipment Co., Ltd., Montreal 1, Quebec

ASF



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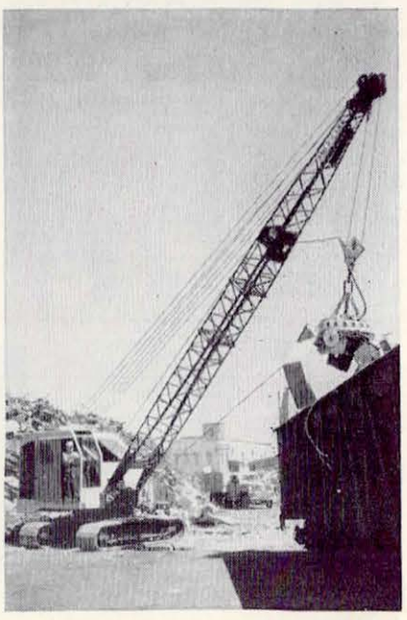
IF YOU NEED A Money-maker...



If you're losing money on an old crane or shovel, let's put a new 3/4-yard American Crawler to work for you... *right now*. You'll never know how many extra loads one man can move in a day until you see him handle the new American. We've cut his legwork by 60%... given him comfort and easy control undreamed of in older machines. The American Crawler is available as crane, shovel, pull shovel or dragline. Every item in today's news says *now is the time to buy.*

2702M
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American Hoist
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SOLD AND SERVICED THROUGH AUTHORIZED DISTRIBUTORS

"Word's getting around—

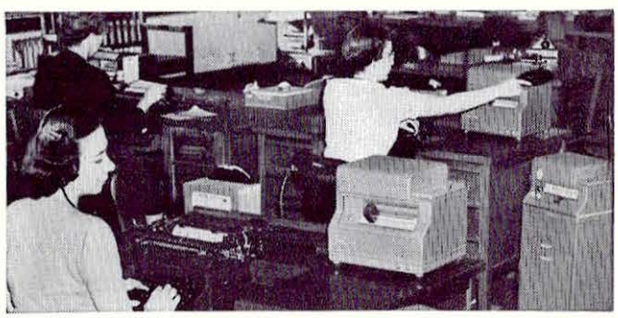
THE NEW FASHIONED WAY OF DICTATING IS TELEVOICE!"

Only Edison makes it!

Thomas A Edison
INCORPORATED

It solves your secretary shortage!

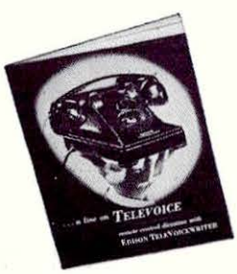
One TeleVoicewriter at a secretary's desk records for a *number* of dictating phones. We take any competent secretary and have her comfortably handling the dictation of three, six—even twenty people, if you like—from the first day on! . . . Nothing equals Televoice for e-a-s-e of use—for getting work out faster—for low, *low* cost. The trend is to Televoice, the *new*-fashioned way.



IN THE BALTIMORE & OHIO's car service department, for example, TELEVOICE enables just three secretaries to handle all dictation. Extra help is no longer needed for peak loads. TELEVOICE also serves B & O's transportation department.

EDISON TELEVOICEWRITER

The Televoice System



Read this eye-opening booklet! Shows you how Televoice gets faster action—with greater ease—at lower cost. No obligation—just send coupon, filled in or clipped to your letterhead. Or phone your local Thomas A. Edison representative for demonstration.

Thomas A. Edison, Inc. *(Ediphone Division)*
38 Lakeside Ave., West Orange, N. J.

Okay—send me A LINE ON TELEVOICE

Name_____

Title_____

Company_____

Address_____

City_____ Zone____ State____

On the GO with the PENNSY and the B&O

Today more leading railroads than ever before are using Bendix Fuel Injection Equipment in all phases of their operation.

On sleek streamlined passenger trains or in yard switching, this outstanding fuel injection equipment is constantly demonstrating its efficiency and reliable performance.

Yes, on the Pennsy, the B & O, in fact wherever you go, you'll find Bendix Fuel Injection Equipment at work helping to maintain schedules and reduce operating costs.

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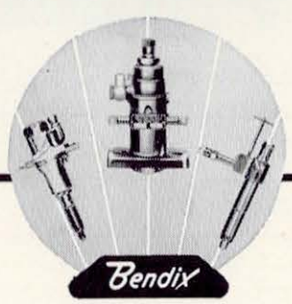
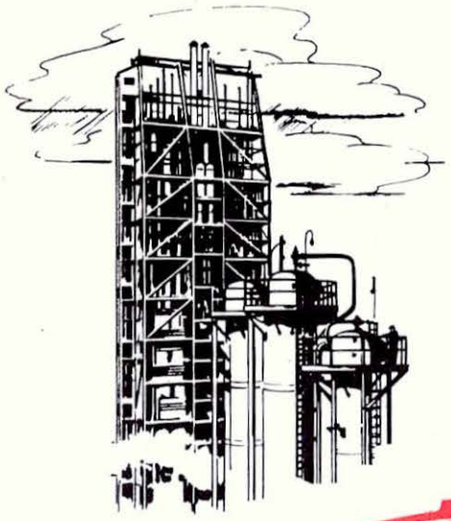
FUEL INJECTION EQUIPMENT!

SCINTILLA MAGNETO DIVISION of
SIDNEY, NEW YORK

Bendix AVIATION CORPORATION

Western Office: 582 Market Street, San Francisco 4, California
Export Sales: Bendix International Division, 72 Fifth Ave., New York 11, N. Y.





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to meet rigid specifications of diesel engine manufacturers

Ashland special DIESEL

fuels and lubricants

Our modern refineries, including several catalytic plants, assure you the finest fuels and lubricants.

In every case where engine manufacturers have established specifications, we have equalled or bettered their requirements for that particular grade of fuel. Not only can we meet these requirements, but rigid controls over every refining operation assure that each shipment received adheres to these specifications. You can depend on Ashland diesel fuels for the same day-in, day-out operating efficiency.

Ashland also offers a complete line of tested lubricants. These include the well-known VALVOLINE and ENARCO brands which many operators of diesel equipment consider the finest in the field.

...complete line of lubricants for diesel equipment

ASHLAND OIL & REFINING COMPANY

ASHLAND, KENTUCKY

SUPPLY TERMINALS: Ashland, Ky. — Buffalo, N. Y. — Canton, O. — Cincinnati, O. — Cleveland, O. — Erie, Pa. — Evansville, Ind. Findlay, O. — Follansbee, W. Va. — Freedom, Pa. — Kenova, W. Va. — Kobuta, Pa. — Louisville, Ky. — Marietta, O. — Nashville, Tenn. — Niles, O. — Paducah, Ky. — Pittsburgh, Pa. — St. Elmo, Ill. — St. Louis, Mo. — Toledo, O.

That's why the NEW HAVEN chose J-M TERRAFLEX Flooring for this diner

DESPITE the beauty of its vivid, clear colors, this dining car floor will never need coddling. It will resist the hardest wear . . . is unaffected by grease, oil and mild acids. It is easy to clean, and even caustic soaps, which often damage other types of resilient flooring, cannot harm it.

That's because Terraflex is made of tough, flexible vinyl plastic, fortified with strong asbestos fibers. This results in a flooring that is both resilient and extremely durable —with colors that are clearer, brighter than ever obtained in a flooring of its type.

Terraflex is highly fire-resistant and will not support combustion. And because of its superior flexibility, it does not crack, curl, become loose or brittle, or shrink around the edges. Moreover, it will not lose its sheen from constant wear.

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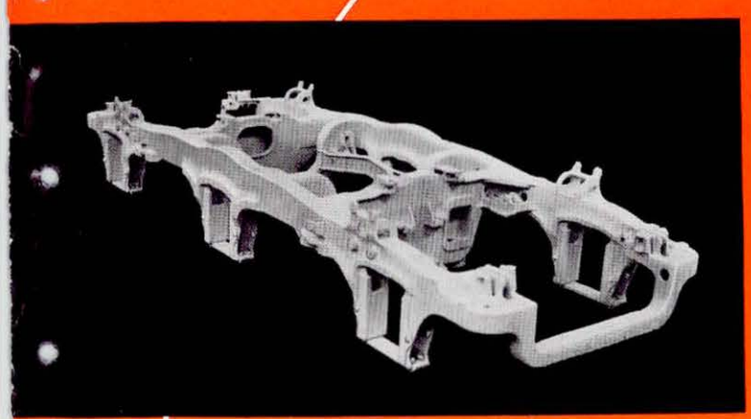
JOHNS-MANVILLE JM PRODUCTS **Johns-Manville** 94 YEARS OF SERVICE TO TRANSPORTATION

Commonwealth one-piece cast steel underframe 43 ft. long for pulpwood car — 22 cord capacity.

Commonwealth One-Piece Steel Castings



Cast steel 6-wheel motor truck frame for diesel locomotive.

Rugged, Dependable, Efficient in all Types of Railroad Service

Here molten steel is being poured from a 50-ton ladle into a mold where it will take the shape of one of the many **COMMONWEALTH** one-piece cast steel products for railroad cars and locomotives.

Forming castings in one piece makes possible the most economical distribution of metal where it is needed for greatest strength, usually with a saving in over-all weight. The one-piece design combines many separate parts in a single casting assuring economy of maintenance and increased availability of railroad equipment.

GENERAL STEEL CASTINGS

GRANITE CITY, ILL. • EDDYSTONE, PA.

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we stand on our record

Just Ask the Railroads That have used us!

FRANK SPENO RAILROAD BALLAST CLEANING CO. INC.

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"The New York Central is now using the Cornell-Dubilier vibrator converter ON 58 OUT OF 66 RADIO EQUIPPED DIESEL LOCOMOTIVES WITH 75 VOLT CONTROL"

NEW YORK CENTRAL SYSTEM

Cornell-Dubilier Electric Corp.
2900 Columbia Avenue
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Gentlemen:

The basic requirement of any equipment in railroad service is dependability. The Cornell-Dubilier Vibrator Converter with its rugged construction and standby vibrator feature, which provides continuous service after the main vibrator fails, provides this characteristic. The plug-in vibrators are easily replaced, insuring low maintenance costs with no loss of service.

The New York Central pioneered the use of the vibrator type power unit on locomotives in 1945 when a sample unit was constructed for supplying power to the radio equipment. This unit which is still in service, was the forerunner of the present day models, since it included the principle of the automatic changeover circuit to a second vibrator unit. The New York Central is now using the Cornell-Dubilier Vibrator Converter on 58 out of 66 radio equipped Diesel locomotives with 75 volt control.

Yours very truly
NEW YORK CENTRAL SYSTEM

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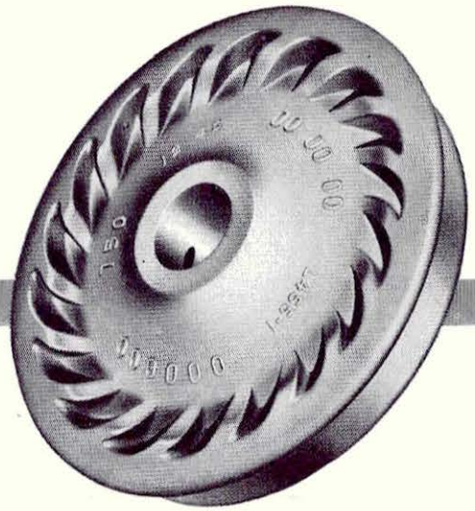
CONSISTENTLY DEPENDABLE
CORNELL-DUBILIER
VIBRATOR CONVERTERS *with Railroad Dependability*

PLANTS IN SOUTH PLAINFIELD, N. J.; NEW BEDFORD, WORCESTER, AND CAMBRIDGE, MASS.; PROVIDENCE, R. I.; INDIANAPOLIS, IND.; FUQUAY SPRINGS, N. C.; AND SUBSIDIARY, THE RADIART CORP., CLEVELAND, OHIO

I.C.C. figures prove...



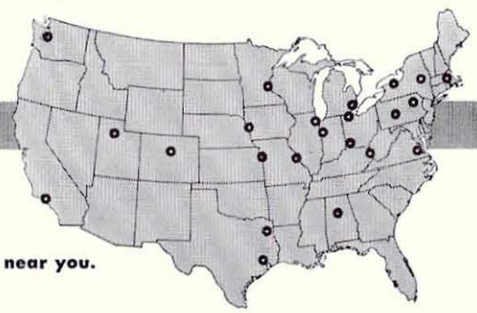
that the *safest* wheel you can put in freight car service is the AMCCW chilled car wheel

The AMCCW chilled car wheel, improved in design so that it has more brackets—with thicker, heavier, more continuous flange support – and heavier tread on both rim and flange sides, has been in service since it was approved by the AAR as standard in 1950. Even before this the record shows the chilled car wheel, as produced at AMCCW plants, to be the safest wheel in freight car service. The record should continue to improve in the future as more improved AMCCW wheels go into service.

CAR MILES OF SERVICE PER DERAILMENT INVOLVING WHEELS

AMCCW WHEELS		NEXT BEST CAR WHEEL
85 million	1946	73 million
81 million	1947	71 million
77 million	1948	72 million
115 million	1949	86 million
81 million	1950	67 million
91 million	1951	76 million

The base used is ICC figures on freight car miles, apportioned to the different wheels, and derailments reported to the ICC attributed to wheels.



In good supply
Available locally
Short-haul delivery
Reduced inventory
Low first cost
Low exchange cost
Increased ton mileage
High safety standards
AMCCW plant inspection
Easier shop handling

Quick, low-cost delivery of chilled car wheels from the AMCCW plant near you.

ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS

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Albany Car Wheel Co. • American Car & Foundry Co.
Griffin Wheel Co. • Marshall Car Wheel & Foundry Co.
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REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1952

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total 1952	Total (inc. misc.) 1951	Operating Expenses: Maint. Way and Structures: Total 1952	Total 1951	Deprec. and Retirements	Maint. Equipment: Total 1952	Total 1951	Deprec. and Retirements	Traffic	Transportation	Total 1952	Total 1951	Operating ratio 1952	Operating ratio 1951	Net from railway operation	Railway tax accruals	Net railway operating income 1952	Net railway operating income 1951
Akron, Canton & Youngstown	Feb.	171	$461	....	$472	$414	$67	$66	$6	$58	$43	$16	$36	$141	$333	$301	70.6	72.7	$139	$61	$63	$39
	2 mos.	171	928	....	947	880	137	126	11	119	82	31	70	285	672	600	70.9	68.2	275	128	111	105
Atchison, Topeka & Santa Fe	Feb.	13,073	38,043	4,533	46,778	39,314	5,926	5,906	741	8,531	7,970	1,653	1,160	14,615	32,182	30,512	68.8	77.6	14,597	8,494	6,166	3,956
	2 mos.	13,074	76,808	9,197	94,685	86,455	12,259	11,862	1,342	17,176	16,540	3,318	2,249	30,601	66,413	63,135	70.1	73.0	28,271	16,647	11,602	9,838
Atlanta & St. Andrews Bay	Feb.	82	298	2	308	267	42	34	2	22	22	4	8	59	146	131	47.2	49.1	163	88	51	43
	2 mos.	82	612	3	632	595	76	66	5	42	42	7	16	126	290	267	45.9	44.9	342	183	107	97
Atlanta & West Point	Feb.	93	320	45	413	326	47	47	5	60	50	11	15	153	300	294	72.5	90.2	114	60	38	—2
	2 mos.	93	603	112	817	748	91	89	10	120	105	23	30	305	597	598	73.1	80.0	220	122	68	28
Western of Alabama	Feb.	133	261	45	346	360	49	68	6	64	55	12	16	131	283	299	81.8	83.2	63	36	22	22
	2 mos.	133	536	111	727	790	98	121	13	128	114	25	31	277	580	603	79.8	76.3	147	92	47	68
Atlantic & Danville	Feb.	205	164	....	167	130	40	24	2	11	9	5	11	50	125	94	74.7	72.7	42	10	16	12
	2 mos.	205	327	....	333	293	75	56	4	22	17	10	23	104	247	212	74.3	72.4	85	19	29	30
Atlantic Coast Line	Feb.	5,472	11,727	2,453	15,342	13,167	2,178	3,034	162	2,663	2,431	524	383	5,073	10,967	11,337	71.5	86.1	4,375	3,325	612	386
	2 mos.	5,472	23,728	4,891	31,038	27,454	4,270	6,089	259	5,239	4,801	1,049	748	10,225	21,824	22,886	70.3	83.4	9,214	6,250	2,221	993
Charleston & Western Carolina	Feb.	343	552	4	573	517	138	122	3	107	74	38	17	166	439	368	76.6	71.2	134	60	70	71
	2 mos.	343	1,097	7	1,140	1,010	277	233	7	216	139	75	34	334	885	721	77.6	71.4	255	115	128	142
Baltimore & Ohio	Feb.	6,187	32,143	2,008	36,505	31,076	5,070	3,922	412	8,068	7,672	970	858	14,395	29,838	27,522	81.7	88.6	6,668	2,548	3,478	1,512
	2 mos.	6,187	64,962	4,309	74,076	66,511	9,569	7,861	797	16,262	15,494	1,925	1,696	29,804	60,345	56,358	81.5	84.7	13,731	5,166	7,030	4,621
Staten Island Rapid Transit	Feb.	29	245	49	296	265	48	45	12	37	35	8	1	142	257	242	86.8	91.2	39	36	—13	—27
	2 mos.	29	514	100	621	572	98	93	23	80	73	16	3	296	533	507	85.9	88.7	87	72	—19	—38
Bangor & Aroostook	Feb.	602	1,464	41	1,567	1,017	235	170	16	237	157	65	18	423	972	665	62.0	65.4	595	270	235	146
	2 mos.	602	2,886	80	3,077	1,968	470	337	32	484	303	125	38	841	1,956	1,323	63.6	67.2	1,121	536	453	274
Bessemer & Lake Erie	Feb.	212	1,398	1	1,419	1,272	176	132	16	627	764	96	17	438	1,358	1,424	95.7	112.0	61	150	113	41
	2 mos.	212	2,742	1	2,787	2,678	339	321	32	1,269	1,372	191	33	857	2,693	2,743	96.6	102.4	94	309	231	141
Boston & Maine	Feb.	1,701	5,353	981	7,084	6,456	1,357	1,181	176	1,144	1,120	171	112	3,174	6,110	5,769	86.3	89.4	974	491	148	—186
	2 mos.	1,702	11,026	1,945	14,518	14,185	2,746	2,388	353	2,236	2,296	333	236	6,553	12,443	11,768	85.7	83.0	2,075	1,051	340	371
Cambria & Indiana	Feb.	35	165	....	165	137	16	11	1	93	84	16	....	27	142	127	86.2	92.7	23	77	60	56
	2 mos.	35	332	....	332	293	32	22	2	172	167	33	....	56	272	265	82.0	92.5	60	151	118	126
Canadian Pacific Lines in Maine	Feb.	234	759	61	844	740	134	72	5	129	100	8	7	293	577	434	68.3	58.7	267	31	143	201
	2 mos.	234	1,529	124	1,710	1,526	221	172	10	275	182	17	15	606	1,145	896	67.0	58.7	564	63	303	411
Canadian Pacific Lines in Vermont	Feb.	90	191	16	229	218	85	44	4	37	35	....	6	115	250	196	109.3	89.7	—21	13	—89	—42
	2 mos.	90	384	28	451	452	137	89	7	72	59	....	12	245	482	388	106.8	85.8	—30	27	—167	—67
Central of Georgia	Feb.	1,786	3,021	253	3,622	3,508	569	597	45	594	603	103	129	1,505	2,990	3,043	82.5	86.8	633	326	219	92
	2 mos.	1,786	6,144	492	7,364	7,261	1,142	1,198	88	1,173	1,191	205	258	3,076	6,048	6,102	82.1	84.0	1,317	707	451	326
Central of New Jersey	Feb.	411	2,728	423	3,436	3,122	488	425	67	613	593	83	59	1,762	3,076	3,001	89.5	96.1	360	409	—413	—665
	2 mos.	411	5,623	876	7,127	6,865	978	951	142	1,274	1,256	166	117	3,646	6,352	6,315	89.1	92.0	775	827	—835	—981
Central of Pennsylvania	Feb.	207	1,612	6	1,667	1,321	138	146	18	362	405	71	26	477	1,044	1,070	62.7	81.0	622	108	797	480
	2 mos.	207	3,280	12	3,397	3,017	298	332	31	747	838	140	51	978	2,160	2,302	63.6	76.3	1,238	187	1,596	1,176
Central Vermont	Feb.	422	746	77	880	795	176	155	16	175	158	12	16	425	828	744	94.1	93.6	52	48	—70	—65
	2 mos.	422	1,595	141	1,856	1,689	304	268	32	342	319	25	31	873	1,634	1,466	88.0	86.8	222	93	11	12
Chesapeake & Ohio	Feb.	5,117	27,704	668	29,619	24,765	3,930	3,561	349	6,107	4,820	1,354	607	9,785	21,648	19,113	73.1	77.2	7,971	3,934	4,346	2,755
	2 mos.	5,117	56,842	1,405	60,843	53,065	8,158	7,260	702	12,627	9,975	2,718	1,151	20,069	44,455	39,100	73.1	73.7	16,368	8,267	8,824	6,608
Chicago & Eastern Illinois	Feb.	868	2,337	246	2,922	2,476	317	349	27	406	398	113	111	1,057	2,072	1,983	70.9	80.1	851	371	393	173
	2 mos.	868	4,681	552	5,899	5,356	653	687	52	832	794	228	227	2,162	4,232	4,022	71.7	75.1	1,667	717	769	545
Chicago & Illinois Midland	Feb.	130	598	..	613	573	82	92	7	193	142	20	28	199	545	466	85.8	81.3	69	42	6	59
	2 mos.	130	1,226	....	1,260	1,506	163	197	13	386	301	41	65	421	1,120	1,042	88.9	69.2	140	85	17	215
Chicago & North Western	Feb.	7,915	12,166	1,602	15,664	12,839	2,252	2,070	339	3,166	2,960	746	334	7,723	14,290	13,298	91.3	103.6	1,374	1,044	—32	—1,477
	2 mos.	7,915	24,577	3,563	32,074	29,556	4,613	4,197	687	6,356	5,948	1,487	686	15,942	29,306	27,232	91.4	92.1	2,768	2,109	—112	—499
Chicago, Burlington & Quincy	Feb.	8,816	17,276	1,361	20,601	19,827	1,965	1,856	355	3,361	3,136	698	486	7,358	13,992	13,506	67.9	68.1	6,610	3,556	2,668	2,738
	2 mos.	8,825	35,053	3,053	42,195	41,197	4,521	4,101	692	7,187	6,259	1,390	943	15,411	29,736	27,957	70.5	67.9	12,459	6,825	4,777	5,624
Chicago Great Western	Feb.	1,474	2,717	12	2,900	2,601	451	405	37	440	380	119	101	950	2,002	1,827	69.1	70.2	898	308	308	298
	2 mos.	1,474	5,446	33	5,831	5,600	901	813	75	841	741	234	202	1,930	3,999	3,812	68.6	68.1	1,832	619	636	612
Chicago, Indianapolis & Louisville	Feb.	541	1,615	65	1,792	1,633	318	292	19	247	263	63	83	601	1,340	1,289	74.8	79.0	452	181	161	106
	2 mos.	541	3,090	140	3,462	3,439	635	581	38	498	534	125	165	1,234	2,714	2,675	78.4	77.8	748	286	247	250
Chicago, Milw., St. Paul & Pacific	Feb.	10,671	17,632	1,442	21,185	17,468	2,672	2,436	381	4,556	3,997	950	456	9,001	17,673	16,485	83.4	94.4	3,511	1,974	1,195	—318
	2 mos.	10,671	35,254	3,193	42,710	39,158	5,382	4,843	744	9,425	8,053	1,901	884	18,650	36,444	33,816	85.3	86.4	6,266	3,525	1,947	1,161
Chicago, Rock Island & Pacific	Feb.	7,916	14,346	1,578	17,349	14,958	1,841	1,729	239	2,954	2,580	468	483	6,410	12,488	11,875	72.0	79.4	4,861	2,182	1,958	806
	2 mos.	7,916	28,295	3,524	34,872	32,453	3,774	3,356	481	5,759	5,035	931	984	13,166	25,310	23,789	72.6	73.3	9,563	4,260	3,875	3,017
Chicago, St. Paul, Minn. & Omaha	Feb.	1,617	2,364	169	2,777	2,282	349	293	43	478	428	89	64	1,466	2,484	2,273	89.4	99.6	293	187	—182	—335
	2 mos.	1,617	4,790	380	5,673	5,074	726	608	94	899	852	176	132	3,017	5,037	4,753	88.8	93.7	636	376	—229	—351
Clinchfield	Feb.	317	2,080	1	2,091	2,066	257	243	18	324	314	81	42	460	1,117	1,085	53.4	52.5	974	214	884	915
	2 mos.	317	4,206	2	4,229	4,179	545	499	35	677	631	164	81	964	2,340	2,143	55.3	51.3	1,889	428	1,743	1,930

Table continued on next left-hand page

COMBUSTION ENGINEERING - SUPERHEATER, INC.

PRODUCTS

For Locomotives

THROTTLES
SUPERHEATERS
FEEDWATER HEATERS
EXHAUST STEAM INJECTORS
STEAM DRIERS
PYROMETERS
THERMOSTATIC HEATER VALVES
WELDED BOILER SHELLS

●

CONTROLLED RECIRCULATION STEAM GENERATORS FOR ALL SERVICES

●

For stationary and marine power plants

Complete steam generating units comprised of all types of boilers, fuel burning and related equipment for capacities from 1,000 to 1,000,000 or more lbs. of steam per hr.

For pulp mills

Units for recovery of chemicals and waste heat.

For process industries

Mills, pulverizers, air separators and flash drying systems for grinding, drying and separation. Incineration systems. Pressure vessels, columns, towers, tanks.

For municipalities

Flash drying and incineration systems for sewage sludge.

For homes

Automatic gas and electric water heaters. Range boilers. Soil pipe.

●

PROPERTIES

Affiliated Companies

The Superheater Company, Ltd., Montreal
The Superheater Company, Ltd., London
The Superheater Company, Pty., Ltd., Sydney
Compagnie des Surchauffeurs, Paris
Compagnie des Echangeurs de Chaleur, S. A., Paris
Compagnie des Echangeurs de Chaleur, Vaduz, S. A., Liechtenstein
Combustion Engineering Corporation, Ltd., Montreal
Combustion Engineering de Mexico, S. A., Mexico, D. F.
Productos de Hierro y Acero, S. A., Mexico, D. F.
Ingenieria y Fuerza, S. A., Mexico, D. F.
Combustion Engineering Ltda., Rio de Janeiro
Combustion Publishing Company, Inc., New York
Stein et Roubaix, Paris
N. V. Carbo-Union Industrie Maatschappij, Rotterdam
Kohlenscheidungs-Gesellschaft, m.b.H., Stuttgart
Combustion Engineering-Superheater, Africa, (Pty.), Ltd., Johannesburg

Manufacturing Plants

U. S. A.—Chattanooga, Chicago, East Chicago, Monongahela, St. Louis
Canada—Sherbrooke, Quebec
Abroad (owned by affiliates)—Manchester, Eng.; Paris and Roubaix, France
Mexico—Tlalnepantla

C-E ELESCO

Announcement

●

THE BUSINESS OF THE

AMERICAN THROTTLE CO., INC.

HAS BEEN ACQUIRED BY

COMBUSTION ENGINEERING-SUPERHEATER, INC.

The Superheater Company has been closely associated with the American Throttle Company for many years and under this revised arrangement, the same personnel with whom you have been dealing on sales and service matters will continue at your service.

This company will continue all past activities of the American Throttle Company and inquiries or orders for complete throttles or parts will be given prompt attention.

THE SUPERHEATER COMPANY, INC.

Division of COMBUSTION ENGINEERING-SUPERHEATER, INC.
200 MADISON AVENUE, NEW YORK
BANKERS BUILDING, CHICAGO

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1952

Name of road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1952	Total (inc. misc.) 1951	Operating Expenses: Maint. Way and Structures: Total 1952	Total 1951	Deprec. and Retirements	Maint. Equipment: Total 1952	Total 1951	Deprec. and Retirements	Traffic	Transportation	Total 1952	Total 1951	Operating ratio 1952	Operating ratio 1951	Net from railway operation	Railway tax accruals	Net railway operating income 1952	Net railway operating income 1951
Colorado & Southern	Feb.	736	1,048	86	1,253	1,191	118	131	18	231	183	35	27	442	875	842	69.9	70.7	378	229	143	106
	2 mos.	736	2,065	183	2,491	2,425	242	253	37	434	359	70	57	934	1,784	1,714	71.6	70.7	707	415	253	225
Ft. Worth & Denver	Feb.	804	1,683	156	2,008	1,613	237	205	35	234	195	32	52	671	1,293	1,129	64.4	70.0	715	293	320	207
	2 mos.	804	3,307	332	3,982	3,316	475	446	60	473	432	61	110	1,426	2,685	2,413	67.4	72.8	1,297	515	579	368
Colorado & Wyoming	Feb.	41	182	....	293	256	38	18	91	29	24	10	1	119	200	167	68.1	65.3	93	59	33	54
	2 mos.	41	353	....	568	543	64	36	92	67	47	16	2	234	393	324	69.0	59.7	176	112	59	98
Columbus & Greenville	Feb.	168	153	....	158	154	30	34	4	34	27	6	4	48	137	132	87.0	85.9	21	18	6	7
	2 mos.	168	317	....	330	352	72	74	7	64	59	12	8	98	281	277	85.2	78.8	49	38	19	37
Delaware & Hudson	Feb.	793	4,294	161	4,612	4,306	539	488	54	1,045	944	158	83	1,889	3,755	3,475	81.4	80.7	857	428	471	373
	2 mos.	793	9,087	349	9,753	9,559	1,116	988	120	2,135	1,941	294	165	3,857	7,677	7,135	78.7	74.6	2,076	1,160	1,030	1,131
Delaware, Lackawanna & Western	Feb.	964	6,028	792	7,498	6,396	744	692	131	1,424	1,223	291	160	3,330	5,913	5,401	78.9	84.4	1,586	865	772	1,426
	2 mos.	964	12,109	1,627	15,231	13,735	1,484	1,393	253	2,860	2,522	579	329	6,827	12,042	11,160	79.1	81.3	3,189	1,669	1,564	1,140
Denver & Rio Grande Western	Feb.	2,333	5,915	266	6,434	5,424	563	510	85	1,156	963	230	164	2,075	4,229	3,575	65.7	65.9	2,205	1,190	995	918
	2 mos.	2,333	11,427	524	12,438	11,694	1,377	1,052	178	2,352	2,232	449	346	4,290	8,928	8,039	71.8	68.7	3,510	1,911	1,532	1,806
Detroit & Mackinac	Feb.	232	124	2	132	128	43	40	3	21	20	8	4	37	113	104	85.6	81.2	19	14	11	9
	2 mos.	232	262	2	273	299	86	80	5	38	40	15	8	76	226	213	82.6	71.3	48	30	26	31
Detroit & Toledo Shore Line	Feb.	50	678	....	685	631	75	72	3	61	56	17	13	201	363	353	53.0	55.9	322	124	104	73
	2 mos.	50	1,381	....	1,391	1,368	151	144	6	121	105	34	28	411	737	712	53.0	52.0	654	246	208	164
Detroit, Toledo & Ironton	Feb.	464	1,618	....	1,698	1,636	173	166	35	353	243	67	29	410	1,019	919	60.0	56.1	679	351	296	304
	2 mos.	464	3,149	1	3,298	3,469	356	331	60	917	466	133	58	836	2,281	1,832	69.2	52.8	1,017	515	420	672
Duluth, Missabe & Iron Range	Feb.	567	470	1	519	632	475	556	53	700	652	78	9	674	1,968	1,952	379.1	308.6	—1,449	109	—1,493	—1,237
	2 mos.	567	807	2	905	1,344	1,345	1,128	119	1,382	1,341	155	18	1,363	4,342	3,999	479.8	297.6	—3,437	222	—3,594	—2,698
Duluth, South Shore & Atlantic	Feb.	539	611	7	643	697	114	93	7	140	114	20	22	232	529	534	82.2	76.6	115	27	33	98
	2 mos.	538	1,151	16	1,217	1,288	223	184	17	291	225	40	46	470	1,071	1,041	88.0	80.8	147	54	36	141
Duluth, Winnipeg & Pacific	Feb.	175	683	1	691	425	73	64	4	91	60	2	5	259	434	324	62.8	76.1	257	48	140	21
	2 mos.	175	1,317	2	1,333	851	125	111	8	169	119	4	10	508	825	628	61.9	73.7	508	92	253	53
Elgin, Joliet & Eastern	Feb.	236	3,442	....	4,290	3,729	300	325	22	684	601	99	33	1,714	2,880	2,505	67.1	67.2	1,410	605	210	225
	2 mos.	236	7,079	....	8,855	8,317	693	678	46	1,463	1,208	197	65	3,559	6,084	5,256	68.7	63.2	2,771	1,155	366	643
Erie	Feb.	2,242	12,820	613	14,477	13,394	1,537	1,479	225	2,237	2,186	458	364	5,944	10,729	10,282	74.1	76.8	3,748	1,809	1,638	1,198
	2 mos.	2,242	25,960	1,266	29,419	28,235	3,107	2,984	450	4,384	4,332	904	722	12,101	21,641	21,032	73.6	74.5	7,778	3,726	3,339	2,913
Florida East Coast	Feb.	571	2,390	1,216	3,944	2,970	348	285	39	498	382	76	73	1,244	2,380	1,919	60.3	64.6	1,564	588	753	537
	2 mos.	571	4,817	2,104	7,603	5,937	713	698	80	1,043	839	152	145	2,527	4,864	4,044	64.0	68.1	2,739	996	1,347	1,002
Georgia Railroad	Feb.	321	699	38	800	753	110	113	8	123	122	25	33	327	632	593	79.0	78.7	168	40	151	130
	2 mos.	321	1,406	79	1,612	1,588	215	222	17	247	247	51	64	659	1,261	1,210	78.3	76.2	350	79	308	320
Georgia & Florida	Feb.	360	267	....	271	261	78	75	4	32	33	7	17	80	221	223	81.7	85.4	49	17	10	2
	2 mos.	360	529	....	538	578	154	162	7	65	64	15	34	165	447	457	83.0	79.1	92	35	15	44
Grand Trunk Western	Feb.	952	4,196	202	4,711	4,360	618	527	53	814	773	91	73	2,102	3,768	3,405	80.0	78.1	943	284	446	497
	2 mos.	952	8,297	433	9,425	9,289	1,269	1,060	99	1,731	1,692	182	145	4,330	7,814	7,212	82.9	77.6	1,611	575	509	1,136
Can. Natl. Lines in New Engl.	Feb.	172	200	6	233	204	75	41	9	50	31	....	3	150	297	219	127.3	107.2	—64	24	—129	—83
	2 mos.	172	420	12	509	476	134	95	18	131	91	....	5	301	612	499	120.1	104.8	—103	47	—226	—149
Great Northern	Feb.	8,314	14,460	1,023	16,676	14,346	2,909	2,981	295	3,779	3,383	642	367	6,878	14,712	13,544	88.2	94.4	1,964	1,515	286	—556
	2 mos.	8,314	27,862	2,266	32,573	29,906	6,097	5,751	587	7,577	6,781	1,239	726	14,007	30,035	27,397	92.2	91.6	2,538	3,000	—886	—364
Green Bay & Western	Feb.	224	299	....	308	353	58	74	5	34	35	14	20	83	210	233	68.3	66.0	98	67	25	49
	2 mos.	224	609	....	630	711	121	148	10	71	82	28	42	172	439	472	69.7	66.3	191	112	64	108
Gulf, Mobile & Ohio	Feb.	2,878	6,382	398	7,275	6,826	1,055	1,085	68	1,286	1,288	238	247	2,076	5,000	4,937	68.7	72.3	2,274	1,056	850	707
	2 mos.	2,878	13,081	848	14,949	13,970	2,314	2,134	129	2,609	2,651	475	509	4,395	10,515	10,364	70.3	74.2	4,434	2,068	1,657	1,347
Illinois Central	Feb.	6,539	20,103	1,989	24,573	22,115	3,712	3,426	354	4,189	4,134	730	477	9,194	18,586	17,446	75.6	78.9	5,987	3,372	2,217	1,580
	2 mos.	6,539	41,285	3,940	50,231	46,962	7,607	7,001	695	8,717	8,468	1,454	1,003	19,135	38,521	36,342	76.7	77.4	11,710	6,602	4,184	3,885
Illinois Terminal	Feb.	462	773	75	950	761	145	129	26	146	126	31	39	388	767	672	80.8	88.4	183	104	65	17
	2 mos.	462	1,512	155	1,872	1,764	292	265	53	309	274	66	79	816	1,596	1,438	85.3	81.5	276	167	87	114
Kansas City Southern	Feb.	891	3,505	137	3,952	3,520	391	374	33	472	417	89	80	1,114	2,173	1,991	55.0	56.6	1,778	887	657	584
	2 mos.	891	6,988	309	7,950	7,332	752	708	66	890	796	161	172	2,321	4,364	3,997	54.9	54.5	3,586	1,752	1,356	1,279
Kansas, Oklahoma & Gulf	Feb.	327	592	....	598	505	62	31	6	31	38	7	27	128	275	214	45.9	42.5	323	167	123	122
	2 mos.	327	1,227	1	1,239	1,061	120	67	12	86	79	13	54	262	572	444	46.2	41.8	667	344	250	262
Lake Superior & Ishpeming	Feb.	156	61	....	66	63	36	41	9	61	52	11	2	46	156	155	236.7	247.0	—90	27	—106	—101
	2 mos.	156	117	....	125	125	81	79	19	128	105	22	4	95	328	307	261.2	245.9	—202	55	—236	—207
Lehigh & Hudson River	Feb.	96	264	....	264	263	35	34	2	29	23	9	14	87	175	151	66.3	57.7	89	27	44	48
	2 mos.	96	533	....	535	536	79	73	5	61	50	17	26	174	361	315	67.6	58.8	173	62	74	99
Lehigh & New England	Feb.	184	529	....	534	583	68	64	7	129	111	38	12	167	411	396	76.9	68.0	124	97	106	111
	2 mos.	184	1,141	....	1,152	1,279	146	123	13	253	223	71	23	361	859	820	74.6	64.1	292	193	199	258
Lehigh Valley	Feb.	1,220	5,914	321	6,561	5,651	725	679	106	1,035	1,052	202	134	2,461	4,598	4,582	70.1	81.1	1,963	949	976	540
	2 mos.	1,220	11,960	722	13,408	12,268	1,527	1,405	209	2,110	2,210	405	284	5,052	9,479	9,457	70.7	77.1	3,929	1,939	2,013	1,565
Long Island	Feb.	365	960	2,635	3,860	3,542	618	545	85	720	796	118	16	2,136	3,654	3,698	94.7	104.4	206	493	—501	—902
	2 mos.	365	2,079	5,432	8,046	7,566	1,244	1,126	170	1,565	1,576	235	27	5,634	8,815	7,469	109.5	98.7	—768	990	—2,221	—1,387

Table continued on next left-hand page

Norfolk and Western RAILWAY COMPANY

SUMMARY OF ANNUAL REPORT FOR 1951

Gross operating revenues in 1951 reached an all-time high, principally because of the sharp increase in export of bituminous coal, heavier movement of merchandise freight and small increases in freight rates during a part of the year.

Although labor and material costs continued to rise, the ratio of operating expenses to operating revenues was reduced from 69.29 per cent in 1950 to 66.92 per cent.

Total taxes were $49,426,000, an increase of $14,325,000 over 1950, and more than twice the amount for 1949. Taxes amounted to $2,143 for each employee, $8.78 for each share of Common Stock and 24 cents for each dollar of operating revenues.

Dividends on outstanding stocks totaled $20,570,000. Dividends at the annual rate of $1.00 a share were paid on Adjustment Preferred Stock and at the annual rate of $3.50 a share on Common Stock. The latter included an extra dividend of 50 cents. This marked the fifty-first consecutive year that dividends have been paid on Common Stock.

During the year, 146 new industries and additions to existing plants, with a combined investment of $132,000,000, were established along the lines of the railway.

PROPERTY IMPROVEMENTS and EQUIPMENT

Capital expenditures for additions and improvements to fixed properties amounted to $9,584,000, while $18,958,000 was spent for new equipment and equipment betterments. A main line change and grade revision, five miles in length, is in progress.

Since 1945, capital expenditures for improvements, modernization and equipment have amounted to $142,639,000, all of which were made from the Company's treasury. Uncompleted authorized capital expenditures at the beginning of 1952 totaled approximately $37,153,000.

The equipment program for 1952 and early 1953 includes 2,610 hopper coal cars, 150 covered hopper cars, 1,000 gondola cars, 500 box cars, 4 heavy-duty, coal-burning steam road locomotives and 15 switching locomotives.

Experimentation with two types of coal-burning turbine electric locomotives continues. An experimental steam turbo-electric locomotive, with boiler pressure double that of the conventional steam locomotive, is expected to be ready for trial runs within the next twelve months.

CONDENSED INCOME STATEMENT

		1951	Comparison with 1950		Per Cent
Revenues and Other Income:					
Freight—Coal		$ 122,539,895	Inc.	$ 30,444,770	33
Other		68,274,214	Inc.	5,383,983	8
Passenger		6,067,881	Inc.	1,298,071	27
Mail, Express and Miscellaneous		9,713,443	Inc.	1,472,169	18
Total Railway Operating Revenues		$ 206,595,433	Inc.	$ 38,598,993	23
Rent Income—Equipment and Joint Facilities—Net		11,044,781	Dec.	1,528,730	12
Other Income—Net		2,519,093	Inc.	445,724	21
Total		$ 220,159,307	Inc.	$ 37,515,987	21
Expenses and Other Charges:					
Way and Structures—Repairs and Maintenance		$ 27,319,472	Inc.	$ 2,952,453	12
Equipment—Repairs and Maintenance		39,026,989	Inc.	6,592,163	20
Transportation—Operations		61,218,989	Inc.	10,997,200	22
Other Expenses		10,692,882	Inc.	1,306,234	14
Total Railway Operating Expenses		$ 138,258,332	Inc.	$ 21,848,050	19
Taxes—Federal	$40,053,472				
State, County and Local	9,372,667	49,426,139	Inc.	14,325,157	41
Interest on Funded Debt		1,723,732	Dec.	99,845	5
Total		$ 189,408,203	Inc.	$ 36,073,362	24
Net Income		$ 30,751,104	Inc.	$ 1,442,625	5
Sinking Funds and Miscellaneous Appropriations		1,329,284	Dec.	102,935	7
Balance of Income		$ 29,421,820	Inc.	$ 1,545,560	6

REVENUES AND EXPENSES OF RAILWAYS

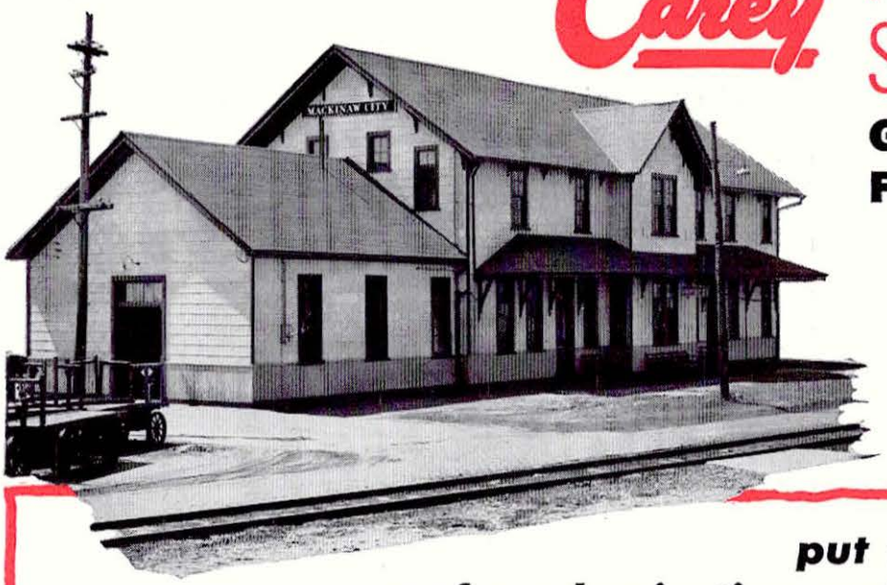
(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1952

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1952	Total (inc. misc.) 1951	Operating Expenses: Maint. Way and Structures: Total 1952	Total 1951	Deprec. and Retirements	Maint. Equipment: Total 1952	Total 1951	Deprec. and Retirements	Traffic	Transportation	Total 1952	Total 1951	Operating ratio 1952	Operating ratio 1951	Net from railway operation	Railway tax accruals	Net railway operating income 1952	Net railway operating income 1951
Louisiana & Arkansas	Feb.	756	1,900	61	2,049	1,771	327	330	25	259	209	69	65	560	1,287	1,159	62.8	65.5	762	339	357	199
	2 mos.	756	3,971	127	4,255	3,820	658	672	46	511	454	139	140	1,145	2,602	2,450	61.2	64.1	1,652	811	723	447
Louisville & Nashville	Feb.	4,765	17,040	1,103	19,324	16,379	2,639	2,489	217	3,802	3,521	644	338	6,678	14,105	13,758	73.0	84.0	5,219	3,181	2,586	1,053
	2 mos.	4,765	34,521	2,442	39,574	36,101	5,365	4,845	442	7,842	7,007	1,267	662	13,764	28,968	27,830	73.2	77.1	10,605	6,591	5,282	3,673
Maine Central	Feb.	981	2,070	117	2,331	2,083	430	352	28	386	347	70	21	839	1,754	1,536	75.2	73.8	577	275	202	216
	2 mos.	981	4,373	251	4,926	4,395	863	722	54	793	716	140	42	1,711	3,564	3,105	72.4	70.6	1,362	680	499	523
Midland Valley	Feb.	334	146	....	148	150	44	33	6	21	18	3	5	56	133	111	89.7	73.9	15	17	—6	—4
	2 mos.	334	306	....	311	347	89	69	14	35	30	5	10	116	263	227	84.7	65.3	48	34	..	48
Minneapolis & St. Louis	Feb.	1,406	1,682	4	1,739	1,503	261	273	29	300	253	70	112	577	1,358	1,253	78.1	83.4	381	226	91	32
	2 mos.	1,406	3,516	10	3,631	3,419	519	549	52	581	511	139	231	1,190	2,739	2,640	75.4	77.2	892	525	280	246
Minn., St. Paul & Sault Ste. Marie	Feb.	3,224	2,607	73	2,850	2,472	611	512	48	659	634	93	73	1,286	2,750	2,516	96.5	101.7	99	212	—152	—283
	2 mos.	3,224	4,974	153	5,469	5,216	1,153	986	92	1,371	1,271	192	156	2,647	5,571	5,091	101.9	97.6	—102	428	—526	—283
Mississippi Central	Feb.	48	201	....	204	187	43	39	2	23	26	3	13	60	152	141	74.4	75.4	52	27	16	14
	2 mos.	148	423	—1	430	408	88	78	4	53	55	6	27	124	314	292	73.0	71.7	116	52	43	43
Missouri Illinois	Feb.	172	400	....	403	363	59	48	4	69	58	20	8	115	262	232	65.1	63.7	141	76	83	52
	2 mos.	172	808	....	816	801	129	108	8	150	126	40	18	228	546	479	66.9	59.7	270	156	147	126
Missouri-Kansas-Texas Lines	Feb.	3,242	6,041	416	7,042	5,966	862	771	125	912	950	219	247	2,421	4,783	4,551	67.9	76.3	2,259	1,026	937	513
	2 mos.	3,242	11,682	814	13,686	13,188	1,865	1,620	220	1,922	1,883	430	509	4,944	9,880	9,567	72.2	72.5	3,806	1,703	1,552	1,288
Missouri Pacific	Feb.	6,950	16,731	931	19,469	16,188	2,825	2,893	257	3,610	3,437	692	447	7,385	14,887	14,267	76.5	88.1	4,583	1,755	2,208	1,058
	2 mos.	6,950	33,749	2,099	39,614	36,738	5,636	6,020	497	7,380	7,070	1,370	912	14,989	30,188	29,508	76.2	80.3	9,425	3,607	4,792	3,475
International-Great Northern	Feb.	1,104	2,698	174	3,119	2,597	651	597	37	550	482	100	63	1,218	2,620	2,415	84.0	93.0	499	120	252	86
	2 mos.	1,104	5,457	393	6,407	5,856	1,268	1,264	68	1,094	983	201	119	2,478	5,233	5,003	81.7	85.4	1,174	351	553	367
Gulf Coast Lines	Feb.	1,727	3,536	85	3,848	3,250	....	....	....	....	....	....	89	1,172	2,602	2,646	67.6	81.4	1,246	614	445	298
	2 mos.	1,727	7,159	177	7,801	7,483	....	....	....	....	....	....	177	2,407	5,294	5,488	67.8	73.3	2,507	1,238	851	758
Monongahela	Feb.	178	723	....	725	501	89	72	10	92	73	8	1	268	458	372	63.1	74.1	267	66	51	—55
	2 mos.	178	1,478	....	1,483	1,271	194	154	22	195	160	15	2	559	964	806	65.0	63.4	520	132	75	64
Montour	Feb.	51	203	....	204	205	20	18	3	85	85	17	1	93	209	201	102.6	97.6	—5	38	39	27
	2 mos.	51	421	....	422	435	44	23	5	167	172	35	2	189	421	398	99.9	91.6	1	77	78	71
Nashville, Chatt. & St. Louis	Feb.	1,032	2,789	165	3,255	2,898	485	481	44	485	395	119	113	1,093	2,295	2,156	70.5	74.4	960	509	463	346
	2 mos.	1,032	5,573	332	6,564	6,068	1,012	888	94	964	837	237	229	2,265	4,713	4,388	71.8	72.3	1,851	957	.880	800
New York Central	Feb.	10,725	48,120	9,815	65,827	53,756	7,292	8,001	897	14,244	13,323	2,193	1,077	30,757	56,674	54,984	86.1	102.3	9,152	5,137	2,935	—6,077
	2 mos.	10,725	99,077	21,791	137,185	122,810	17,490	17,116	1,819	29,064	27,537	4,346	2,163	63,345	118,817	114,550	86.6	93.3	18,367	10,323	5,406	—5,694
Pittsburgh & Lake Erie	Feb.	221	3,845	81	4,102	3,577	429	443	39	1,077	1,059	231	74	1,446	3,248	3,264	79.2	91.3	854	674	898	468
	2 mos.	221	7,935	172	8,478	7,754	941	947	85	2,318	2,212	457	149	2,915	6,781	6,683	80.0	86.2	1,697	1,272	1,812	1,156
New York, Chicago & St. Louis	Feb.	2,188	12,925	169	13,510	10,264	1,580	1,345	145	2,295	2,053	324	295	4,497	9,077	8,031	67.2	78.2	4,434	2,235	1,933	948
	2 mos.	2,188	25,564	387	26,754	24,386	3,398	2,883	315	4,451	4,084	641	618	9,060	18,429	17,513	68.9	71.8	8,325	4,157	3,544	2,745
New York, New Haven & Hartford	Feb.	1,793	7,453	4,194	13,060	11,088	2,006	1,676	284	2,025	1,986	369	189	5,659	10,574	9,802	81.0	88.4	2,486	1,092	698	—82
	2 mos.	1,793	15,235	8,570	26,802	24,576	3,832	3,334	540	4,143	4,043	731	382	11,669	21,497	20,022	80.2	81.5	5,306	2,192	1,602	1,020
New York Connecting	Feb.	21	352	....	378	216	71	85	25	35	1	....	....	86	196	136	51.7	62.9	183	90	120	24
	2 mos.	21	658	....	706	486	132	153	50	55	20	....	....	154	347	286	49.2	58.8	359	170	234	105
New York, Ontario & Western	Feb.	541	518	—1	536	529	100	97	25	83	83	23	26	256	493	495	92.0	93.6	43	35	—45	—64
	2 mos.	541	1,063	—1	1,104	1,176	203	179	42	167	165	46	51	531	1,012	1,003	91.7	85.3	92	72	—92	—31
New York, Susquehanna & Western	Feb.	120	393	38	455	400	53	49	5	62	47	11	10	191	341	318	74.9	79.3	114	29	54	18
	2 mos.	120	778	78	899	861	108	99	11	122	94	23	18	394	700	632	77.8	73.3	199	62	75	93
Norfolk & Western	Feb.	2,135	15,966	429	17,441	13,804	2,219	2,183	278	3,849	3,188	570	303	5,194	12,117	10,983	69.5	79.6	5,324	3,752	2,426	1,688
	2 mos.	2,135	32,448	907	35,301	30,077	4,521	4,251	559	7,830	6,556	1,133	576	10,735	24,861	22,216	70.4	73.9	10,440	7,521	4,674	3,960
Norfolk Southern	Feb.	643	961	....	976	842	193	153	13	114	111	22	47	300	727	659	74.5	78.2	248	126	76	64
	2 mos.	643	1,896	....	1,938	1,742	374	309	25	242	221	43	92	614	1,473	1,345	76.0	77.2	465	235	139	117
Northern Pacific	Feb.	6,887	11,694	481	13,202	10,464	2,011	1,814	275	2,913	2,557	467	303	5,493	11,359	9,971	86.0	95.3	1,843	1,216	915	—89
	2 mos.	6,887	22,217	1,127	25,456	22,411	4,248	3,515	572	5,923	5,182	935	595	11,380	23,517	20,317	92.4	90.7	1,939	2,421	196	876
Northwestern Pacific	Feb.	331	890	2	924	700	285	256	19	113	81	4	5	377	797	710	86.2	101.4	127	51	—13	—130
	2 mos.	331	1,576	4	1,641	1,498	582	466	35	201	180	8	10	742	1,566	1,406	95.5	93.8	74	103	—198	—133
Oklahoma City-Ada-Atoka	Feb.	132	89	....	89	80	22	18	2	3	3	....	2	21	51	46	57.1	57.9	38	17	10	9
	2 mos.	132	188	....	189	175	40	37	5	16	5	....	4	44	112	95	59.1	54.2	77	33	19	21
Pennsylvania	Feb.	10,120	61,880	12,708	82,685	67,591	10,811	9,592	1,356	18,549	19,140	1,972	1,340	37,370	71,355	69,683	86.3	103.1	11,330	5,571	4,551	—8,424
	2 mos.	10,120	126,359	27,833	170,616	151,527	22,572	18,688	2,727	38,383	40,336	4,291	2,668	76,721	147,085	141,607	86.2	93.5	23,531	11,250	9,565	—3,454
Pennsylvania-Reading Seashore Lines	Feb.	364	567	114	708	565	201	253	25	93	101	16	9	527	860	919	121.4	162.6	—152	103	—367	—571
	2 mos.	364	1,190	233	1,482	1,329	413	454	50	190	189	31	19	1,083	1,774	1,792	119.7	134.8	—292	208	—728	—902

Table continued on next left-hand page

Carey FIRE-CHEX SHINGLES GO TO WORK FOR THE NEW YORK CENTRAL SYSTEM



put the brakes on roof modernization and upkeep costs

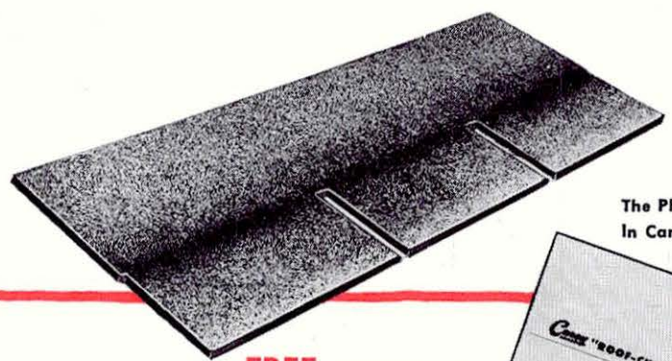
In the photo above you see the New York Central's passenger station at Mackinaw City, Michigan, recently re-roofed with Carey Fire-Chex asbestos-plastic shingles.

According to New York Central officials, Fire-Chex were selected for their ability to meet – at low cost – the requirements for "Class A" fire resistance, specified by the Underwriters. Fire-Chex are the only roofing of any kind ever rated "Class A" without underlayment by Underwriters' Laboratories, Inc.

Moreover, as the New York Central discovered, Fire-Chex require less labor to apply than rigid types of roofing. They are readily adaptable to unusual roof contours, can be applied easily by company forces.

And not only do Fire-Chex *look* good, they furnish a practical solution to the problem of maintenance. Made of Carey's patented asbestos-plastic, Fire-Chex contain more asbestos fiber than conventional asbestos-cement shingles – yet they are tough and pliable, not hard and brittle. No wonder they withstand the ravages of weather to a degree unknown before.

Whether your problem is one of roof design, replacement, repair or maintenance, it will pay you to consult with Carey. With over 78 years experience, and complete research facilities behind them, Carey products are the finest known to modern science – cost you less in the long run. Tell your Carey Industrial Sales Engineer about your problem – or write direct.



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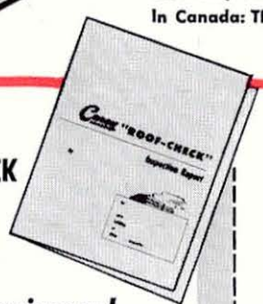

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REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF FEBRUARY AND TWO MONTHS OF CALENDAR YEAR 1952

Name of Road		Average mileage operated during period	Operating Revenues				Operating Expenses										Operating ratio		Net from railway operation	Railway tax accruals	Net railway operating income	
					Total (inc. misc.)		Maint. Way and Structures			Maint. Equipment												
			Freight	Pass.	1952	1951	Total 1952	Total 1951	Deprec. and Retirements	Total 1952	Total 1951	Deprec. and Retirements	Traffic	Transportation	Total 1952	Total 1951	1952	1951			1952	1951
Pittsburg & Shawmut	Feb.	97	181	....	181	184	24	20	11	56	52	6	4	51	144	138	79.3	74.9	37	6	57	35
	2 mos.	97	364	....	366	425	47	40	15	120	106	12	7	103	295	285	80.7	66.9	71	11	107	95
Pittsburgh & West Virginia	Feb.	132	726	....	729	521	108	95	23	195	143	34	52	188	569	472	78.0	90.5	161	101	113	70
	2 mos.	132	1,424	....	1,436	1,303	212	240	46	400	305	67	105	378	1,148	1,075	80.0	82.5	288	180	207	195
Reading	Feb.	1,321	9,663	564	10,929	9,494	1,420	1,198	255	2,100	2,009	386	151	4,306	8,289	7,767	75.8	81.8	2,640	1,481	1,298	794
	2 mos.	1,322	20,054	1,168	22,740	20,451	2,996	2,508	463	4,410	4,110	770	302	9,065	17,434	16,098	76.7	78.7	5,305	2,760	2,587	2,004
Richmond, Fredericksburg & Potomac	Feb.	118	1,548	655	2,516	2,075	261	219	24	279	265	64	20	762	1,471	1,343	58.5	64.7	1,045	582	342	276
	2 mos.	118	3,122	1,336	5,068	4,375	540	437	47	567	526	127	40	1,549	2,999	2,717	59.2	62.1	2,068	1,171	662	630
Rutland	Feb.	397	384	20	483	393	77	83	10	79	90	13	18	237	**433**	**442**	**89.7**	**112.6**	50	30	2	—99
	2 mos.	397	797	42	999	892	157	162	19	168	171	27	38	478	889	899	89.0	100.8	110	63	13	—109
Sacramento Northern	Feb.	271	315	....	322	262	61	50	5	13	18	4	2	83	168	163	52.2	61.9	154	14	119	72
	2 mos.	271	510	....	521	528	120	103	9	28	36	8	4	163	334	324	64.1	61.3	187	30	118	143
St. Louis-San Francisco	Feb.	4,601	8,327	640	9,755	9,091	1,671	1,681	175	1,634	1,631	483	275	3,632	7,746	7,486	79.4	82.3	2,009	1,605	931	733
	2 mos.	4,601	16,972	1,327	19,919	19,364	3,347	3,302	312	3,410	3,416	963	559	7,532	15,827	15,418	79.5	79.6	4,092	2,338	1,796	1,864
St. Louis, San Francisco & Texas	Feb.	159	408	6	441	451	46	47	4	37	39	1	19	144	257	259	58.3	57.5	184	42	90	56
	2 mos.	159	792	12	857	782	94	91	7	70	71	2	40	310	537	498	62.6	63.6	320	21	196	75
St. Louis Southwestern Lines	Feb.	1,569	5,819	33	6,077	4,464	581	501	57	606	591	93	156	1,710	3,243	3,019	53.4	67.6	2,834	1,723	846	722
	2 mos.	1,569	11,603	89	12,165	10,646	1,207	1,064	108	1,281	1,234	186	328	3,478	6,672	6,274	54.8	58.9	5,493	3,410	1,634	1,559
Seaboard Air Line	Feb.	4,145	11,703	1,665	14,460	12,389	2,254	2,170	166	2,264	2,162	480	362	4,620	10,079	9,414	69.7	76.0	4,381	2,008	1,958	1,211
	2 mos.	4,145	23,292	3,350	28,845	25,941	4,446	4,321	338	4,627	4,315	956	733	9,340	20,317	19,070	70.4	73.5	8,528	3,897	3,828	2,836
Southern	Feb.	6,306	18,140	1,584	21,388	18,959	3,035	2,880	239	4,047	3,908	724	446	7,393	15,797	14,915	73.9	78.7	5,591	3,199	2,284	1,449
	2 mos.	6,306	36,786	3,285	43,515	40,733	6,117	5,855	480	8,247	7,809	1,438	881	15,383	32,430	30,752	74.5	75.5	11,085	6,237	4,406	3,753
Alabama Great Southern	Feb.	326	1,346	85	1,548	1,459	211	198	12	347	355	81	35	521	1,175	1,133	75.9	77.7	373	218	100	131
	2 mos.	326	2,687	185	3,113	3,032	456	424	26	733	733	162	69	1,095	2,480	2,389	79.7	78.8	633	409	177	278
Cinn., New Orleans & Texas Pacific	Feb.	337	3,142	233	3,569	3,163	442	436	32	843	767	163	70	1,023	2,519	2,287	70.6	72.3	1,049	652	353	390
	2 mos.	337	6,248	475	7,110	6,617	901	871	63	1,626	1,523	327	135	2,032	4,978	4,603	70.0	69.6	2,132	1,332	837	911
Georgia Southern & Florida	Feb.	397	591	116	773	646	172	145	5	62	57	10	7	233	500	439	64.7	67.9	273	90	69	46
	2 mos.	397	1,178	226	1,543	1,388	339	304	11	133	121	20	15	473	1,009	911	65.4	65.7	534	179	127	113
New Orleans & Northeastern	Feb.	203	830	55	949	935	151	164	15	110	120	27	20	402	728	566	76.7	60.6	221	144	51	119
	2 mos.	203	1,521	112	1,766	2,026	343	325	29	245	229	54	41	646	1,367	1,152	77.4	56.9	399	277	81	285
Southern Pacific	Feb.	8,136	36,205	3,494	42,414	33,752	5,884	4,448	502	8,164	7,504	1,490	793	15,576	32,359	28,162	76.3	83.4	10,055	5,541	3,989	1,247
	2 mos.	8,136	70,551	7,025	83,120	75,437	10,519	9,018	930	16,555	15,415	2,992	1,633	31,974	64,661	58,675	77.8	77.8	18,459	10,333	7,269	5,379
Texas & New Orleans	Feb.	4,291	10,829	708	12,363	10,024	1,763	1,757	141	1,652	1,685	88	254	4,235	8,478	8,178	68.6	81.6	3,885	1,846	1,175	406
	2 mos.	4,291	21,678	1,495	24,855	22,296	3,559	3,684	260	3,492	3,301	176	523	8,541	17,199	16,890	69.2	75.8	7,656	3,641	2,260	1,673
Spokane International	Feb.	152	179	1	190	144	64	73	2	19	18	8	5	54	151	152	79.1	105.4	40	11	14	—32
	2 mos.	152	375	2	400	317	135	130	4	43	36	16	10	116	323	293	80.8	92.2	77	24	28	—20
Spokane, Portland & Seattle	Feb.	931	2,089	77	2,297	1,719	338	356	43	285	284	93	25	730	1,469	1,356	63.9	78.9	828	311	450	130
	2 mos.	931	4,142	187	4,603	3,959	689	686	87	632	525	177	55	1,495	3,053	2,754	66.3	69.6	1,550	516	908	730
Tennessee Central	Feb.	286	433	1	456	388	115	86	5	70	68	18	12	139	358	320	78.6	82.5	98	23	39	9
	2 mos.	286	863	7	916	843	215	172	10	139	137	37	23	303	723	651	79.0	77.2	193	49	74	65
Texas & Northern	Feb.	8	98	....	110	88	8	6	....	8	10	2	1	23	44	50	40.2	56.8	66	32	22	13
	2 mos.	8	173	....	191	206	12	17	....	19	18	5	2	41	83	103	43.7	50.0	108	52	36	46
Texas & Pacific	Feb.	1,834	5,597	401	6,510	5,554	935	758	111	1,104	807	253	175	2,120	4,649	3,841	71.4	69.2	1,861	904	669	634
	2 mos.	1,834	11,316	822	13,217	11,968	1,952	1,578	317	2,298	1,769	502	356	4,327	9,578	8,326	72.5	69.6	3,639	1,725	1,341	1,332
Texas Mexican	Feb.	162	222	....	239	212	88	54	6	23	26	8	9	53	192	154	80.3	72.4	47	17	11	19
	2 mos.	162	458	....	500	495	160	117	12	55	52	17	17	108	378	337	75.6	68.2	122	49	35	58
Toledo, Peoria & Western	Feb.	239	559	....	567	712	81	57	6	37	37	8	46	144	337	333	59.5	46.7	230	109	79	115
	2 mos.	239	1,166	....	1,180	1,267	162	119	13	84	68	16	88	288	686	630	58.1	49.7	494	230	176	188
Union Pacific	Feb.	9,867	33,321	2,988	39,076	33,223	4,165	4,112	439	7,407	7,054	1,174	793	14,493	28,958	26,897	74.1	81.0	10,119	6,750	2,532	944
	2 mos.	9,867	65,562	6,451	78,226	72,440	8,845	8,027	825	15,144	14,369	2,327	1,809	29,786	59,926	55,038	76.6	76.0	18,300	12,446	4,179	3,979
Utah	Feb.	110	166	....	166	76	21	16	2	49	50	5	1	83	162	119	97.3	156.3	5	12	—5	—46
	2 mos.	110	394	....	394	212	42	31	4	110	104	10	2	196	364	263	92.4	123.9	30	24	4	—59
Virginian	Feb.	611	4,146	2	4,312	3,100	471	368	59	964	718	171	44	1,006	2,578	1,939	59.8	62.5	1,734	964	855	648
	2 mos.	611	8,613	4	8,964	6,790	1,003	739	116	1,952	1,460	343	90	2,034	5,270	3,996	58.8	58.9	3,694	1,897	2,018	1,407
Wabash	Feb.	2,393	8,309	445	9,455	8,216	1,053	974	100	1,240	1,119	331	281	3,795	6,661	6,205	70.4	75.5	2,795	1,264	1,111	598
	2 mos.	2,393	16,158	925	18,448	17,956	2,152	2,034	195	2,532	2,371	654	563	7,753	13,665	13,101	74.1	73.0	4,784	2,097	1,856	1,630
Ann Arbor	Feb.	294	807	....	813	750	87	72	16	115	105	30	25	318	562	511	69.1	68.2	251	121	117	100
	2 mos.	294	1,500	....	1,514	1,487	180	152	34	235	207	59	51	637	1,142	1,065	75.4	71.6	373	179	168	165
Western Maryland	Feb.	836	4,099	8	4,325	3,782	464	507	42	889	765	174	84	1,319	2,915	2,713	67.4	71.8	1,410	785	823	638
	2 mos.	836	8,318	19	8,829	8,101	958	1,017	87	1,805	1,551	347	165	2,800	6,056	5,597	68.6	69.1	2,774	1,536	1,568	1,443
Western Pacific	Feb.	1,193	3,865	231	4,184	3,931	669	531	67	666	608	129	185	1,352	3,095	2,606	74.0	66.3	1,089	597	414	718
	2 mos.	1,193	7,355	412	7,943	8,449	1,373	1,015	137	1,344	1,211	257	405	2,681	6,253	5,397	78.7	63.9	1,691	968	571	1,558
Wisconsin Central	Feb.	1,046	2,404	35	2,589	1,984	321	269	35	451	576	64	68	1,099	2,042	2,015	78.9	101.5	547	156	226	—354
	2 mos.	1,046	4,710	75	5,082	4,424	666	538	70	946	1,092	127	143	2,215	4,180	4,062	82.3	91.8	901	310	299	328

For maximum Diesel Performance use Vanadium Steels and Irons

You can obtain the mechanical properties required for satisfactory operation and long service life of Diesel locomotives by using Vanadium steels and irons.

Vanadium steel forgings, as well as Vanadium iron castings, have been designed for the best balance of mechanical properties obtainable for the service required of each specific part.

Recommended steel and iron compositions are given in the accompanying list for a variety of parts, many of which have already established satisfactory service records. A choice of materials is shown in some instances, in recognition of preference and of those variations in design and type of service which govern the properties required.

The metallurgical engineers of the Vanadium Corporation of America realize that each part is an individual problem, and they are prepared to cooperate with you to the fullest extent in selecting the best material for each application.

• • •

Write for Data Sheet giving details of composition, heat treatment and mechanical properties of Vanadium steels and irons for various Diesel applications.

MAKERS OF ALLOYS

VANCORAM BRAND

CHEMICALS AND METALS

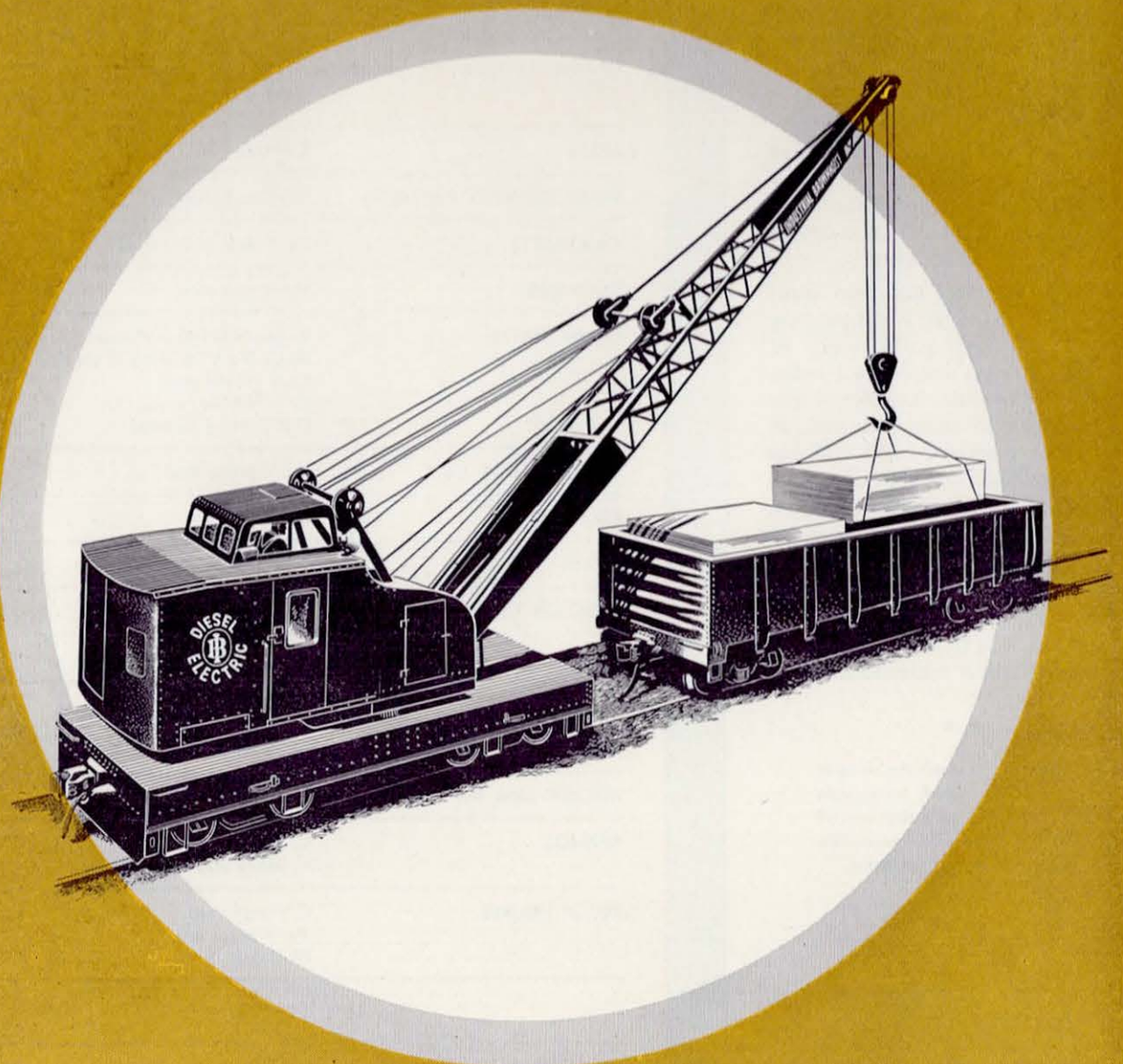
PART	MATERIAL
	STEELS
AXLES	C-V steel
BRAKE RIGGING CASTINGS	Mn-V cast steel
CAMSHAFTS	Cr-V (AISI 6120) steel
COUPLERS	Mn-V cast steel
CRANKSHAFTS	Cr-Mo-V (4140+V) steel Ni-Cr-Mo-V (4340+V) steel Cr-V (6140) steel Cr-V (50T46) steel C-V (1045+V) steel
ENGINE BLOCK BASE	Mn-V plate steel
EQUALIZERS	Mn-V steel
GEARS	Cr-V (6145) steel
INJECTOR TIPS	Cr-V (6145) steel
PISTON PINS	Cr-V (AISI 6120) steel
ROCKER ARMS	Mn-V cast steel
ROCKER ARM BRACKETS	Mn-V cast steel
ROCKER ARM SHAFTS	Cr-V (AISI 6120) steel
SPRINGS	Cr-V (AISI 6150) steel Cr-Mo-V steel
TRUCK FRAMES	C-V cast steel Mn-V cast steel Ni-V cast steel
	IRONS
CYLINDER HEADS	Mo-V cast iron, Graphidox-treated*
CYLINDER LINERS	Cr-Mo-V cast iron, Graphidox-treated* Mn-V cast iron
EXHAUST MANIFOLDS	Mo-V cast iron Cr-Mo-V cast iron, Graphidox-treated*
PISTONS	Ni-Mo-V cast iron, Graphidox-treated* Mo-V cast iron, Graphidox-treated* Ni-Cr-Mo-V cast iron, Graphidox-treated*

**Graphidox is a graphitizing and deoxidizing alloy.*

VANADIUM CORPORATION OF AMERICA

420 LEXINGTON AVENUE, NEW YORK 17, N. Y. • DETROIT • CHICAGO • CLEVELAND • PITTSBURGH

BROWNHOIST Diesel Electric Cranes save time, save labor, save money



Men who know cranes are quick to recognize the fact that Industrial Brownhoist Diesel Electric Locomotive-Cranes provide savings in man-hours, production time and money. Brownhoist Cranes, powerful, efficient units with high tractive power and rapid acceleration, give top performance as a switch engine or as a crane operating magnet, hook or bucket. The patented Monitor-Type Cab and Clear-Vision Boom permit unlimited 360° visibility that helps the operator safely turn out a greater volume of work. The simplified design and accessibility of the moving parts make Brownhoist Cranes easy to maintain and repair. Brownhoist builds Locomotive-Cranes in capacities from 25 to 80 tons.

Write today for complete information.

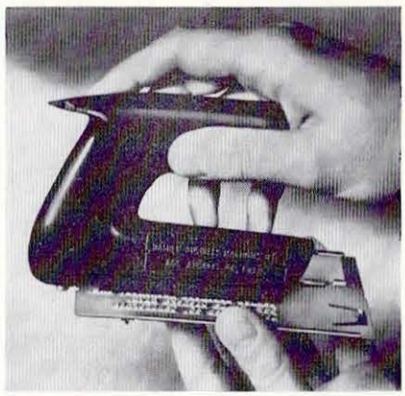
155

CLAMSHELL BUCKET 250 TON WRECKING CRANE COAL-ORE BRIDGE CAR DUMPER

BROWNHOIST
builds better cranes

INDUSTRIAL BROWNHOIST CORPORATION, BAY CITY, MICHIGAN • DISTRICT OFFICES: New York, Philadelphia, Cleveland, San Francisco, Chicago, Canadian Brownhoist, Ltd., Montreal, Quebec • AGENCIES: Detroit, Birmingham, Houston, Los Angeles

NEW and IMPROVED PRODUCTS of the MANUFACTURERS



The "Dashastripper," manufactured by Dashew Business Machines, Inc., Los Angeles 46, Cal., is especially designed to separate plates and cards from all types of Addressograph frames. This makes it possible to save the frames for re-use instead of throwing them away. The device is made of the Dow Chemical Company's new plastic 475 Hi-Impact.

Atomic Hydrogen Welder

A redesign of its atomic-hydrogen transformer welder, incorporating a new hot-start circuit, silicone insulation, and an extra-wide current range, has been announced by the Welding Department of the General Electric Company. The new design, according to G. E. engineers, not only results in a quicker starting, more durable, more versatile welder than the superseded model, but also permits a 17 per cent reduction in price.

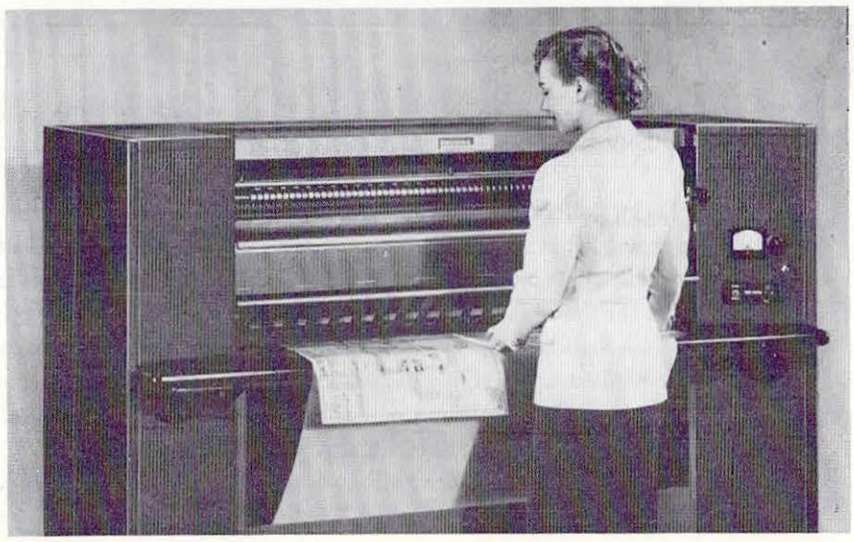
The extra-wide current range of 10 to 100 amp. allows the use of one machine on all applications. The range is divided into two sections, 10 to 35 amp., each extending the entire length of the indicator scale. This allows more precise current settings.

Other advantages of the new welder are noted as a longer coil life because of the silicone insulation, faster starting with the new hot-start circuit, and a range switch to change from one current range to another without moving the welding cable.

Features of the older model welder which are retained are power factor correction capacitors, portable "start-stop" pushbutton, automatic gas shut-off, and stepless current control.

The welder operates on 60 cycles, single-phase voltage, with a 75-amp. rating. It is 41½ in. high, 18¾ in. in diameter, and weighs 350 lb.

The "Unitow" Model 35 tractor recently introduced by Hansel Green & Co., Chicago 6, has a drawbar pull of 3,500 lb. This unit is powered by an International Harvester 6-cylinder Silver Diamond engine.



New Model Bruning "Copyflex" Machine

Production of a new high-speed Copyflex duplicating machine, the Model 30, has just been announced by the Charles Bruning Company, Teterboro, N. J. It has a full 46 in. printing width to handle standard 42 in. roll stock or multiple cut sheets of copying paper.

The 48-in., 2,000-watt Vycor mercury arc lamp enables the machine to print up to a maximum of 12 linear ft. per min.

The Model 30 requires no fixed installations to be made, as it may be connected to a 230 volt, 60 cycle alternating current power line. Fifty cycle machines also are available. Using the Bruning machine, an operator may make copies of documents on Copyflex sensitized paper, acetate-coated paper, film and cloth.

Here's one 19,812 feet long...

The Elgin, Joliet and Eastern Railroad's main track includes continuous welded rail sections up to 19,812 feet long. By the end of 1951, additional super length rails will bring the total of continuous track in the System up to 90 miles. Welded joints produced through OXWELD'S RIBBONRAIL service and equipment eliminates the expense encountered in maintaining thousands of standard rail joints. No wonder minor track repairs on the "J" have already been reduced 50 to 75% in continuous rail territories.

Similar track maintenance savings are possible on your railroad. Let us discuss RIBBONRAIL Pressure Welding Service with you. Write today.

Want full details of the "J's" experience with continuous rail? Write for free booklet F-7772.

OXWELD RAILROAD SERVICE COMPANY
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RAILWAY AGE
EDITORIAL COMMENT

HOW MUCH DEREGULATION OF RAILROADS CAN BE JUSTIFIED?

The railroads want relief from the severities of regulation for which there is no longer any justification—now that transportation has become such a highly competitive business. There still remains reason, however, for retaining *some* degree of regulation. Where, then, draw the line between the kinds of regulation that are still justifiable and those which the passing of time and changed conditions have rendered obsolete?

A Highly Practical Question

This is a highly practical question for railroad people who appear before legislative committees, or on other occasions where they are subjected to interrogation. An answer which is much to the point came out in an interchange between several senators and President Fred G. Gurley of the Santa Fe during Mr. Gurley's recent testimony on the bills (S.2518 and 2519) designed to revise the rule of rate-making and to remove the "time-lag" on rate increases needed to offset inflationary increases in wages and the price of materials.

Mr. Gurley said that the car shortage which has existed since the outbreak of the conflict in Korea arose from too few postwar car orders by the railroads. Such orders, he explained, were held back because of "fear and lack of confidence on the part of railroad management." To correct this lack of confidence, which has resulted in unsatisfactory transportation service, Mr. Gurley believes that "reasonable assurance of fair treatment by public authority" is required. The two pending bills, in his opinion, would aid considerably in giving this necessary assurance.

Chairman Ed Johnson asserted that "raising rates is not constructive—it is exceedingly desperate." In reply Mr. Gurley made it clear that what he was contending for was not higher rates *per se*, but, rather, "the greatest possible freedom of action" on the part of the railroads to price their services in a manner to yield returns which would beget confidence—sufficient confidence to attract and encourage the added investment necessary to keep railroad services equal to public demand. He went on to explain that the freedom in rate-making he sought might bring decreases in some rates. Chairman Johnson seemed to have his doubts about this—but he appeared to be thinking solely of horizontal rate changes.

This point is one of great importance. A great deal of the opposition to greater freedom in rate-making for the railroads appears to stem from the belief that the railroads are obsessed with the conviction that "high rates can cure all their ills." This is a dangerous misconception—what the railroads need, instead, is freedom to use their judgment in making rates, whether high or low, which will produce sufficient earnings to make it possible to finance adequate provision of new facilities. The law as it now stands permits the Interstate Commerce Commission to substitute its judgment for that of management on a question directly affecting the provision of new facilities, wherein management is responsible and the commission is not. Moreover, even to the degree that the commission's judgment may support that of management, it takes too long to make up its mind.

The witness, in answer to a question by Senator Kem, dismissed the outmoded "monopoly" justification for rigid rate regulation in a few words, viz., "All I am seeking is that you remove your mandate to the Interstate Commerce Commission that it exercise its judgment as to the proper price tag to put on something in a competitive situation."

So much for the area of regulation where modern conditions require that the railroads, in the public interest, be accorded greater freedom. In a colloquy between the witness and Senator Hunt, the boundaries of the area of transportation wherein regulation continues to be justified got similar clarification. Senator Hunt brought out by his questions the nature of the "common carrier" obligation to serve all comers; and the fact that the railroads are the only common carriers because the truck operators "just never get around to hauling" the traffic they do not want.

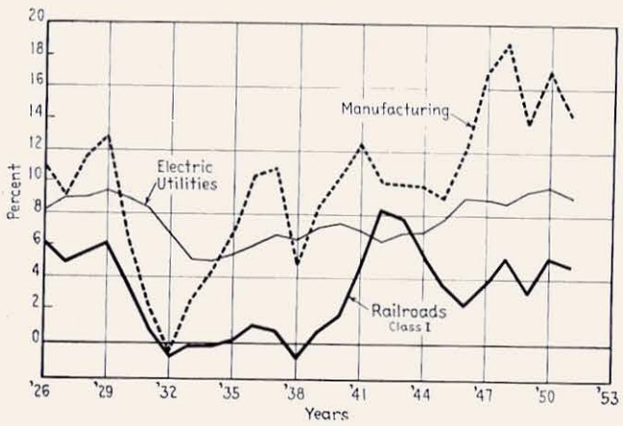
In answer to a question from Senator Kem, Mr. Gurley further explained that he saw no objection to the requirement for "certificates of convenience and necessity" for

common carriers—but the senator did not seem to understand too clearly how freedom to make "market place" rates, on the one hand, jibes with the "convenience and necessity" and "eminent domain" privileges which are accorded to common carriers.

No Conflict in Principles

Actually, there is no conflict in principles involved here. The "common carrier" status, with its modest privileges (by no means those of monopoly) is granted—not for the benefit of the carriers, but for the protection of the public interest in the continuance of common carrier service. The regulation of such service need not and should not go beyond the policing of these privileges, to prevent their abuse—that is, such regulation need not and should not go further than prohibition of gross and arbitrary discrimination. The common carrier status is no longer a license to engage in monopoly, as it was in the days before good roads and automobiles; and the elaborate and detailed regulation of rates, justifiable under conditions of monopoly, is no longer realistic or even tolerable. Such regulation thwarts the public interest, rather than protecting it.

So much for theoretical principles—but the problem of getting an adequate inflow of new capital into the railroad industry is a practical problem—regardless of theory. The railroads are shy of money for as many new facilities as the public needs them to have, because investors find it so much more profitable to put their money into manufacturing or the utilities, as the chart herewith shows—drawn from the significant figures compiled regularly by the National City Bank of New York. Railroad managements contend that they would have more money to spend for the improvements the public wants if some of the burdens of regulation were lifted from their backs. Those who would like to see the railroads have more and better equipment and facilities should insist that the railroads be "called." In other words, give them the degree of freedom they insist would be so helpful, and see whether they can deliver or not.



Comparative earnings of the railroads, the electric utilities and manufacturing in per cent of net assets, 1926-51.
Data provided by courtesy of the National City Bank of New York—I.C.C. original source of railroad figures and Edison Electric Institute of those on electric utilities.

WHAT ABOUT COMMUTATOR SEASONING?

Those in a position to know call commutator seasoning an art rather than a science. It is by no means new to the electrical industry, but some of the largest users of diesel-electric locomotives apparently overlook this means of assuring longer and more efficient life from traction motors. Pointing to such a conclusion is the fact that only six units of a modern machine, for reconditioning and seasoning commutators, had been installed on four railroads up to the first of the year.

The question may be asked if railroads really need a machine they have been generally getting along without since the advent of diesel motive power. An answer is found in the action of four large users of diesels which have considered it worth while to install the machines at a cost up to $20,000 each, evidently because of some difficulties being experienced with traction motor commutation. Another indication that present commutator performance leaves something to be desired, under the arduous conditions of locomotive service, is the action of the new A.A.R. Electrical Section of the Engineering and Mechanical Divisions in recently assigning a committee to study this subject.

Not all users and maintainers of diesel motive power realize the extent to which traction-motor armatures and commutators, made of different materials with widely varying coefficients of expansion, expand and contract under the repeated heating and cooling cycles to which they are subjected in normal operation. Without suitable "curing," or seasoning in advance, it is hardly reasonable to expect commutator segments to stay sufficiently concentric and properly alined to permit satisfactory brush action in picking up the electric current.

Commutator seasoning normally involves applying heat with a gas flame while armatures are revolving at maximum speed until a temperature of about 320 deg. F., is reached, then cooling and tightening. In some instances, the period of revolution of the armature while heated varies from 45 to 60 minutes and another hour is required for cooling, also at full speed. This operation may be repeated as many as six times before the commutator is ground, assuring smoothness and concentricity of the commutator bars within close limits, both hot and cold.

During manufacture, commutator seasoning is a regular practice, and by the same token it would appear that it ought to be done every time the commutator is disturbed, whether by the manufacturer or the railroad.

The present general railway practice of simply baking and tightening commutators without the application of speed may be entirely adequate for small motors and especially those operating under relatively stable conditions of load and vibration, but the service demanded of diesel locomotive traction motors is an entirely different story requiring the best techniques in both new construction and repairs.

Material used in the conferences is prepared by a special "Development Team." This team, shown here working on a program at the Central's workshop at the university, includes, left to right, L. M. Riley, assistant superintendent; G. C. Garris, disbursement accountant; W. H. Waldorf, of the University of Chicago; J. G. Castle, N.Y.C. director of training and employment; and F. J. Oleson, of the railroad's personnel department.

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To Increase Yard Output . . .

The N.Y.C. Trains Its Supervisors

Highly encouraging results reported from carefully planned conference series being carried out in collaboration with University of Chicago

Greater productivity in terminal operations—at less unit cost—is the overall objective of an extensive and carefully prepared training program for supervisory employees now being carried out by the New York Central in the Chicago area.

The program had its inception as a part of a long-range effort by management to improve the work output of forces in its yards, freighthouses and equipment maintenance facilities. It was conceived and developed on the theory that the ultimate factors affecting worker productivity and reduction of expense are under the day-by-day control of the men who immediately supervise the working forces. It is aimed at teaching first-line operating department supervisors—yardmasters, trainmasters, enginehouse and freighthouse foremen, car foremen—the meaning and importance of reducing unit

ROLE OF PURCHASING AND STORES DEPARTMENTS IN CONSERVING CAR SUPPLY

Purchasing and stores departments are among the railroads' largest "shippers" and "receivers." They can help tremendously in the railroads' campaign to secure the most economical use of rolling stock. Here are some principles which department personnel can apply advantageously:

1. Schedule purchase and shipment of company material so that it can be unloaded promptly at destination.

2. Check cars on hand for unloading at storehouses or material yards to make sure there are no unreasonable delays.

3. Report cars made empty promptly to yard forces for pulling. Furnish billing or disposition orders promptly on loads.

4. When unloading cars of company material, remove dunnage, bracing, blocking and debris, and sweep or clean cars to make them immediately available for loading without having to go to cleaning tracks.

5. Do not use cars of a higher class than needed, nor special dimension cars when not essential, for loading company material.

6. Load company material as heavily as possible, preferably to load limit stenciled on each car. Arrange purchase orders to permit and encourage this where practicable.

7. Do not hold cars unnecessarily for prospective loading of company material. Cars should not be ordered for such loading until it is known they can be loaded and billed without delay.

8. Arrange to secure advance advice of car forwardings from manufacturers or shippers to those receivers responsible for unloading company material, and to have notice given by receivers to yard or agency forces, in advance of arrival, as to where cars are to be spotted for unloading.

9. Do not use revenue service cars for loading rubbish, if this can possibly be avoided.

HOW TRACK AND SIGNAL FORCES CAN SAVE CAR DAYS

Maintenance of way and signal departments are large car users. Here are some points for them to remember:

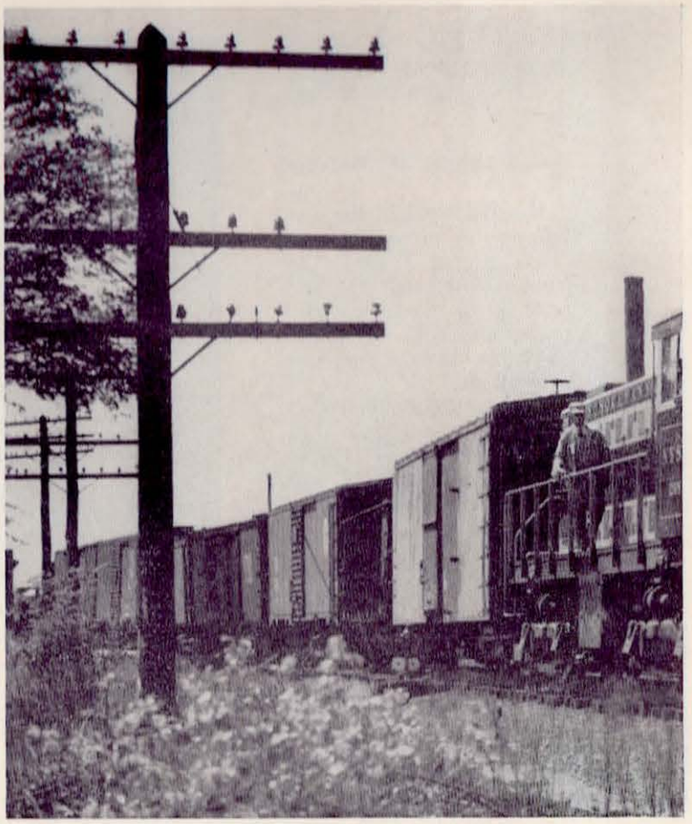
1. Unload all cars of supplies and material promptly, giving particular attention to cars fit for revenue service, so they may be returned to revenue producing service promptly. Completely unload revenue service cars, including removal of dunnage, debris, blocking, strapping, etc., so cars will be immediately available for reuse without movement to cleaning tracks.

2. When at all practicable arrange for receipt of advance information of cars shipped to you, and in turn furnish to yard or station forces advance information on where cars should be spotted for unloading upon arrival. Where commodities are received regularly or in volume and unloaded at regular locations, see that agent is given permanent advance spotting instructions.

3. Do not delay revenue service cars for prospective loading or for piecemeal loading of scrap or other company material. Order cars for loading only when it is known they can be loaded and billed promptly.

4. Do not delay revenue cars in work train service. Endeavor to secure non-revenue cars for such use.

5. Do not use revenue service cars for housing tools or other materials or supplies.



"Road haul lines, in furnishing cars on orders placed by switching lines,

Can Railroads Empty Cars

One of the most vicious practices which can grow up in a terminal, wasteful of car days, motive power and crew time, and particularly deplorable where congestion exists, is the indiscriminate cross haul of empties on orders placed by roads with each other for cars for loading in switch service on the ordering road for road haul via the road from which ordered.

Three things have contributed to such cross haul: (1) the mistaken idea that in the event of payment of claim for damage to a car's contents on account of physical condition of the car, the road furnishing the car must largely assume such payment; (2) eagerness, from a traffic solicitation standpoint, to fill a connecting line's car orders whether or not cars of proper ownership are available; and (3) lack of arrangements on switch and belt lines for adequate commodity inspection, cleaning, conditioning and repairing of cars. The latter usually is coupled with—and largely due to—real or fancied inadequate compensation to switch and belt roads by road haul lines for these services.

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costs in their respective operations. Another purpose is developing concrete ways and means whereby they, as supervisors, can achieve that aim.

Results thus far obtained, as initially measured by the enthusiastic reception which participants have given to the program, have convinced the Central's management that it is on the right track.

Preparation of the program itself was preceded by an extensive confidential survey designed to reveal the opinions, attitudes or feelings of supervisors and employees on the general subjects of pay, working conditions, and their relations with one another and with management. This survey was conducted by the Industrial Relations Center of the University of Chicago, which is collaborating with the railroad in preparation, administration and evaluation of the entire program.

The survey was administered by means of a printed questionnaire distributed to some 4,600 Chicago area yard, freighthouse and shop employees of the N.Y.C. and its subsidiaries, the Indiana Harbor Belt and the Chicago River & Indiana. Returns were made directly to the university under circumstances which fully protected the identity of individual employees. This was followed up and corroborated by selected personal interviews.

The survey showed, among other things, that while there was a very high degree of loyalty to the company, serious problems existed in administration and communication. Unsatisfactory opinion scores on a number of items reflected the ineffectiveness of supervision in the promotion of satisfactory employee relations. In large part, the reason for this failure was found to be a lack of effective effort on the part of management to keep employees properly informed, to take a sufficient interest in their problems and conditions of work, and to do what it could to improve worker-management cooperation by eliminating many unnecessary sources of friction and worker dissatisfaction.

Objectives, Scope and Content

With this information available, a special "Design Committee," composed of both railroad and university representatives, prepared this conference training program, to be directed initially to first-line supervisors. It has four specific objectives:

1. To acknowledge the importance of these supervisors in achieving an effective work performance and to obtain their full cooperation to that end;
2. To develop an attitude of cost consciousness throughout the organization, by building understanding and awareness of controllable costs in the various departments;
3. To develop personal skills in techniques of cost reduction, work simplification, and methods improvement; and
4. To develop motivation and sense of personal responsibility for applying cost reduction procedures throughout the organization.

The program comprises a series of 10 conferences, each of which covers one of the following subjects, in the order listed:

1. Economics of the railroad industry;
2. Economics of the New York Central system and of the Chicago Terminal area;

(These first two units were designed to orient participants in the program, give them an appreciation of the size and importance of the industry, pride in the work they are doing, and some idea of the railroads' place in transportation in relation to their competitors.)

3. Understanding productivity and costs;
4. Analyzing company costs (controllable costs);
5. Using expense controls (budgeting control);
6. Setting work goals;
7. Planning departmental work;
8. Making work simplification count;
9. Spotting jobs for improvement; and
10. Improving work methods.

The program presently covers all supervisors in the Chicago area transportation and equipment departments of the N. Y. C., the I. H. B. and the C. R. & I. up to but not including the level of assistant superintendent and master mechanic. These men—just over 300, all told—are divided into 18 conference groups, with 15 to 20 persons to a group. A typical group includes two trainmasters, one assistant trainmaster, one general yardmaster, three yardmasters, one relief yardmaster, three motive power gang foremen, one freighthouse foreman, one assistant agent, one road foreman of engines, one car department foreman, and one assistant general motive power foreman.

Each of the 18 conference groups meets once every three weeks, each meeting being devoted to one of the subjects listed above. The meetings, which last about two hours each, are held on company time, in meeting rooms or cars on company property. Experience has shown that conferences can be arranged so that about 70 per cent of the men can attend them during some part of their regular on-duty hours. The other 30 per cent, because of difficulties in scheduling or arranging relief assignments, attend outside of duty hours, but have been paid extra for doing so.

To lead the conferences, the company selected 21 trainmasters, yardmasters and foremen who were detached from all duty and given a special full-time training course in conference leadership at the University of Chicago.

These men work in pairs, one conducting a conference and the other acting as recorder, to keep notes and make a written report to the management on ideas, comments, and suggestions which appear likely to be of possible value. Each pair of leaders conducts two conferences on each of the 10 subjects; the men in each pair alternate as leader and recorder.

Program Materials

For each of the 10 subjects in the program there are a conference leader's guide, visual aids, and a participant's manual.

The leader's guide consists of 20 to 40 pages of double-spaced multigraphed typescript. It includes suggested remarks for the leader; possible questions to be asked of the conferees; definite instructions on when and how to use appropriate visual aids; transitional remarks between different topics; and ideas for encouraging group discussions. To make it easy for conference leaders to use, the guide is multigraphed in two colors, has short type lines, and allows ample space for the leader to insert his own notes.

Visual aids, in addition to an ordinary blackboard, consist of printed multicolored charts and maps and "slap-ons"—material designed to be "slapped on" to a felt covered board.

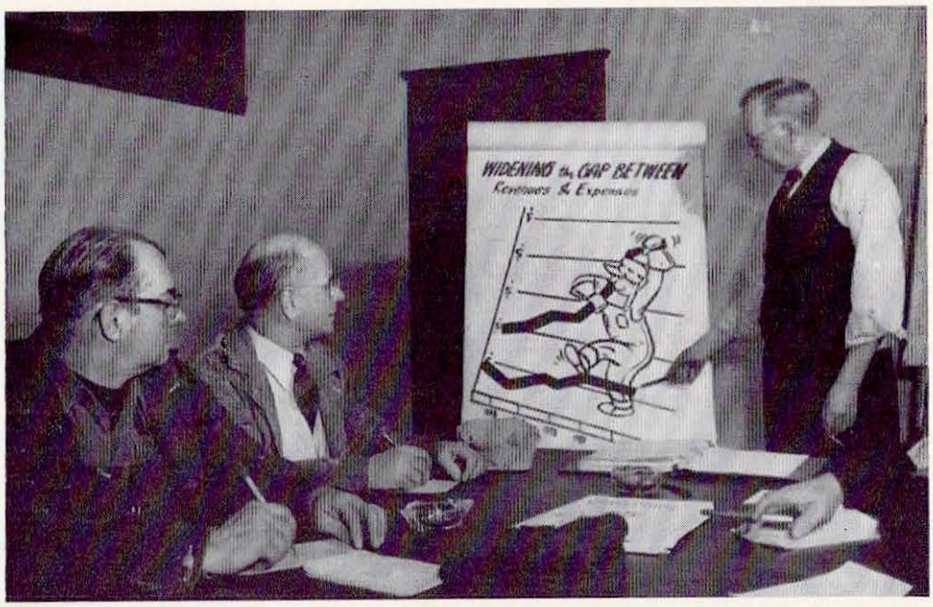
The participant's manuals cover the same general ground as the leader's guides, plus some additional supplementary material. They are planographed in narrative form, with heavy paper covers, and preperforated. They become the permanent property of the man

to whom they are issued; he is also given a permanent binder in which to keep them.

Development of Material

Material used in the conferences is prepared by a "Development Team." This team includes, for the railroad, J. G. Castle, director of training, W. G. Chase, assistant division superintendent, and G. C. Garris, assistant to comptroller; and, for the university's Industrial Relations Center, four staff members who have been assigned full time to this project.

Material produced by this "Development Team" is reviewed by the "Design Committee," headed by J. J. Brinkworth, N. Y. C. vice-president, Lines West, and including 10 other top-level railroad representatives and Robert K. Burns, executive officer of the Industrial Relations Center, Howard W. Johnson, director of management projects, and Nicholas J. Melas, project director, representing the university. The material thus developed and reviewed is then presented and explained to the 21 conference leaders at preliminary meetings, before it is given at any of the individual group conferences.



W. C. Shiffer, general foreman of the railroad's car department at Englewood, emphasizes a point by referring to one of the charts used as visual aids in the conference group meetings.

Evaluation of Results

The program itself is being constantly and carefully checked by observation procedures, by conferences with the leaders, and by interviews with participants.

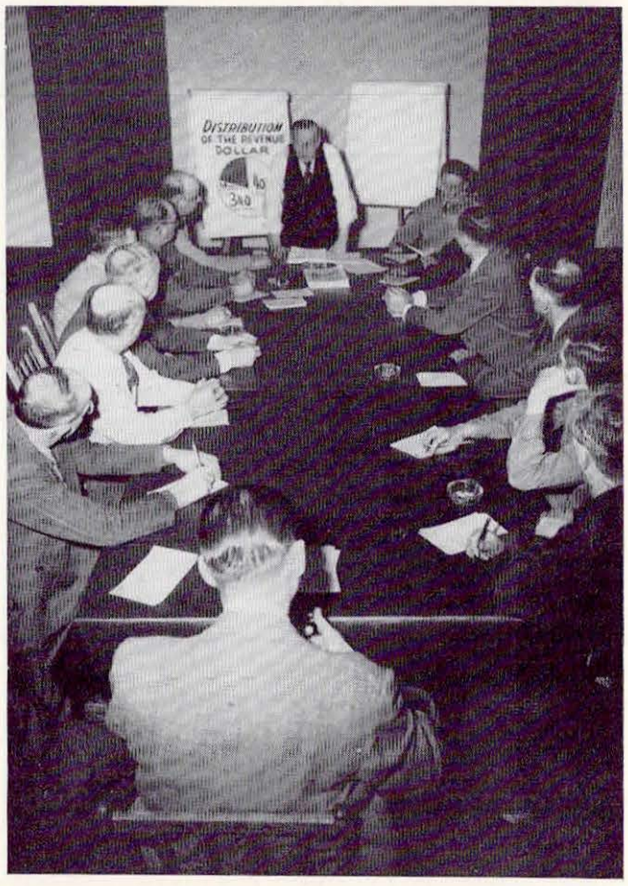
Results to date are definitely encouraging. Reception of the program by those participating in it has been highly enthusiastic. A recent appraisal, made by university representatives through personal interviews, discloses that 80 per cent of the conference leaders were "enthusiastic about the program," with the other 20 per cent recorded as having "good acceptance." Forty-seven per cent of all conference participants were "enthusiastic" and 46 per cent had "good acceptance." Only 7 per cent were merely "neutral" in their reaction.

Conference leaders were almost unanimous in feeling pleased at having been selected for this work and in most cases are aware of a benefit by way of improving their abilities and performance both on and off the job.

Improved Morale

These and other indications of results obtained thus far have convinced the management of the Central that this activity will produce results many times more valuable than the investment in time and money involved. Not the least of the advantages which are expected to accrue are those which will inevitably follow an improved state of morale for these "men on the firing line."

It is as yet too early to make a final or complete appraisal of the program, but results so far have been sufficiently encouraging that arrangements are being made to extend the program to other major terminals on the Central's Lines West.



Mr. Shiffer leads discussion at a typical conference group.

This project, along with other employee relation activities on the Central, is under the general supervision of L. W. Horning, vice-president, personnel and public relations, and under the immediate direction of R. C. Bannister, manager of personnel.

ROLE OF PURCHASING AND STORES DEPARTMENTS IN CONSERVING CAR SUPPLY

Purchasing and stores departments are among the railroads' largest "shippers" and "receivers." They can help tremendously in the railroads' campaign to secure the most economical use of rolling stock. Here are some principles which department personnel can apply advantageously:

1. Schedule purchase and shipment of company material so that it can be unloaded promptly at destination.

2. Check cars on hand for unloading at storehouses or material yards to make sure there are no unreasonable delays.

3. Report cars made empty promptly to yard forces for pulling. Furnish billing or disposition orders promptly on loads.

4. When unloading cars of company material, remove dunnage, bracing, blocking and debris, and sweep or clean cars to make them immediately available for loading without having to go to cleaning tracks.

5. Do not use cars of a higher class than needed, nor special dimension cars when not essential, for loading company material.

6. Load company material as heavily as possible, preferably to load limit stenciled on each car. Arrange purchase orders to permit and encourage this where practicable.

7. Do not hold cars unnecessarily for prospective loading of company material. Cars should not be ordered for such loading until it is known they can be loaded and billed without delay.

8. Arrange to secure advance advice of car forwardings from manufacturers or shippers to those receivers responsible for unloading company material, and to have notice given by receivers to yard or agency forces, in advance of arrival, as to where cars are to be spotted for unloading.

9. Do not use revenue service cars for loading rubbish, if this can possibly be avoided.

HOW TRACK AND SIGNAL FORCES CAN SAVE CAR DAYS

Maintenance of way and signal departments are large car users. Here are some points for them to remember:

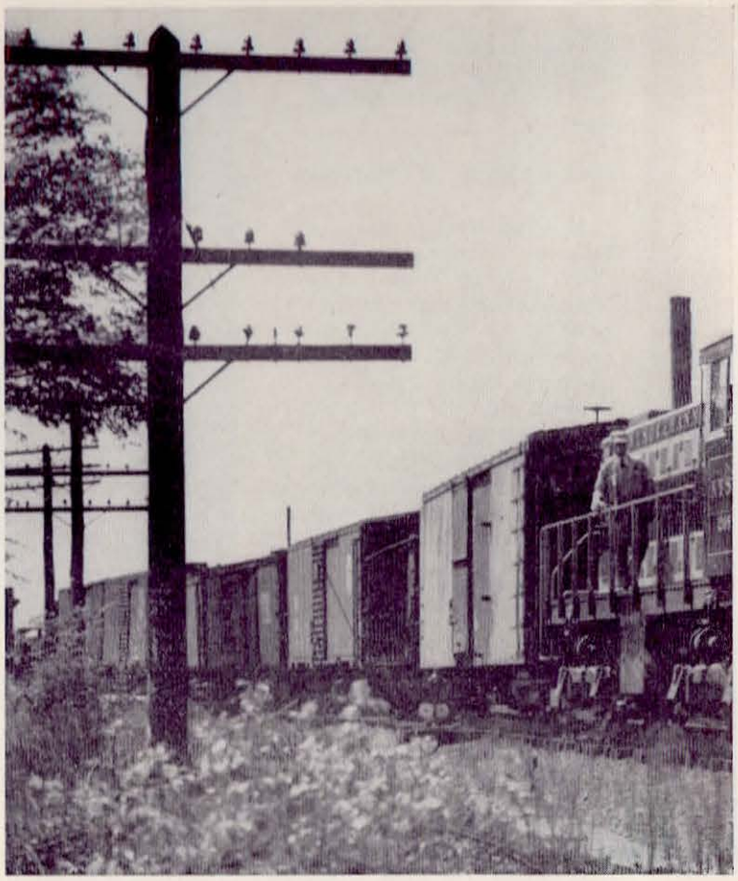
1. Unload all cars of supplies and material promptly, giving particular attention to cars fit for revenue service, so they may be returned to revenue producing service promptly. Completely unload revenue service cars, including removal of dunnage, debris, blocking, strapping, etc., so cars will be immediately available for reuse without movement to cleaning tracks.

2. When at all practicable arrange for receipt of advance information of cars shipped to you, and in turn furnish to yard or station forces advance information on where cars should be spotted for unloading upon arrival. Where commodities are received regularly or in volume and unloaded at regular locations, see that agent is given permanent advance spotting instructions.

3. Do not delay revenue service cars for prospective loading or for piecemeal loading of scrap or other company material. Order cars for loading only when it is known they can be loaded and billed promptly.

4. Do not delay revenue cars in work train service. Endeavor to secure non-revenue cars for such use.

5. Do not use revenue service cars for housing tools or other materials or supplies.

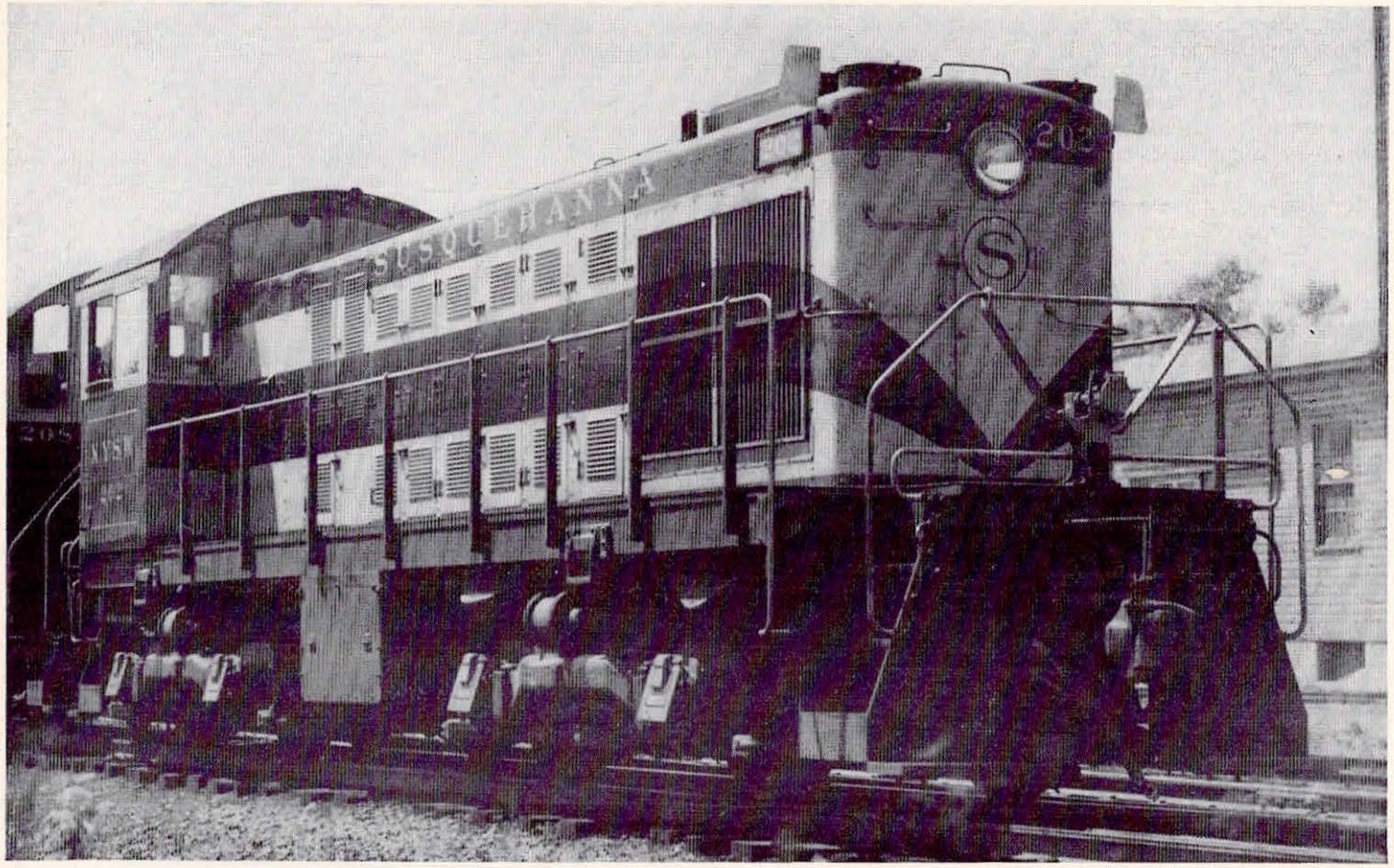


"Road haul lines, in furnishing cars on orders placed by switching lines,

Can Railroads Empty Cars

One of the most vicious practices which can grow up in a terminal, wasteful of car days, motive power and crew time, and particularly deplorable where congestion exists, is the indiscriminate cross haul of empties on orders placed by roads with each other for cars for loading in switch service on the ordering road for road haul via the road from which ordered.

Three things have contributed to such cross haul: (1) the mistaken idea that in the event of payment of claim for damage to a car's contents on account of physical condition of the car, the road furnishing the car must largely assume such payment; (2) eagerness, from a traffic solicitation standpoint, to fill a connecting line's car orders whether or not cars of proper ownership are available; and (3) lack of arrangements on switch and belt lines for adequate commodity inspection, cleaning, conditioning and repairing of cars. The latter usually is coupled with—and largely due to—real or fancied inadequate compensation to switch and belt roads by road haul lines for these services.



are responsible for observing the car service rules in filling such requisitions." (Circular T-71, Operating-Transportation Division, A.A.R.)

Avoid Cross Hauling in Terminals?

By E. W. COUGHLIN
Manager, Railroad Relations
Car Service Division
Association of American Railroads

It would be amusing were it not so tragic to see two neighboring railroads within the same terminal delivering daily to each other empty foreign box cars of the same type and ownerships, for the loading of the same commodities and moving in cross haul through interchanges and yards perhaps already seriously congested.

There is during certain periods a good reason why cars should be ordered from connections for return loading; the trouble is that once the practice is established in those instances and periods when it is desirable, it tends to run on and on, through periods when an exactly opposite policy should be pursued. In periods of normal or subnormal business and adequate car supply, when the observance of car service rules is greatly to be desired as a means of saving empty car movement, a railroad loading cars in switch service for road haul by other roads entering the terminal should supply from cars available on its rails only those ownerships which are properly applicable in accordance with the car service rules. In the absence of such cars on its rails, the loading line should order them from the road haul line. Admittedly this may cause some cross haul of empties in the terminal, but the expense of such cross haul will pay rich dividends in avoiding long empty road hauls.

As a case in point, suppose that a western road reaching Chicago uses one of its own cars, or a car owned by another western road, for switch loading for road haul to New York by one of its eastern connections. Suppose also that the eastern connection uses for switch loading at Chicago one of its system cars or another of eastern ownership for road haul by the western connection to Los Angeles. Obviously, the two cars, by reason of such

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WAYS AND MEANS TO GREATER CAR EFFICIENCY

This is the third of a series of articles by Mr. Coughlin on basic principles and preferred practices in freight car distribution and handling. The preceding articles appeared in* Railway Age *February 11 and March 24. The next article is scheduled to appear in a May issue.

loading, have been placed an aggregate of some 3,000 miles from their owners' rails and, barring the availability of a load to take them back to the owners, they will build up 3,000 empty miles in the process of return to owners. This is a high price to pay for failure to switch the empty cars across Chicago in the first instance.

Similarly, the same carriers at Chicago, in the absence of empty cars of proper ownership to fill connections' orders for cars for return loading could set up both a lot of cross-haul as well as a great deal of potential empty mileage. This would be the case if: (a) the eastern carrier furnished to the western line a Great Northern car for loading to New York; and (b) the western line turned over to the eastern road a Southern car for loading to Los Angeles.

Cars and Freight Claims

The argument that a road should order empty cars from a connection for return loading to that connection, for fear of penalties under freight claim rules should the loading line furnish the car and a claim later develop based upon the car's condition, is rather convincingly demolished in current instructions to the field forces of the Car Service Division, A.A.R. These instructions, quoted below, indicate that freight claim penalties in such a situation and with the exercise of ordinary precautions by the switch carrier are almost non-existent. The switch loading line is amply protected if it has a record that the car used was inspected by one of its car inspectors, and found to be in physical condition to handle the load.

"In a number of cases it has been found that lines loading cars in switch service are delivering empty to road haul lines suitable cars of road haul line or proper foreign ownership while at the same time ordering empty cars from such road haul line to protect return loadings. One excuse advanced for this procedure concerns the provisions of Freight Claim Rule 64, which are, in effect, that carrier furnishing car for loading shall inspect for proper physical condition, and that loss or damage to freight resulting from failure to inspect, clean and repair car or make record of such inspection shall be charged to carrier at fault, which would mean carrier furnishing the cars.

"It is believed that the adverse effect of this rule on the switching road has been unduly exaggerated. In the first place, any switching line is ordinarily equipped to make efficient inspection of empty cars for prospective loading and they do perform this function regularly with respect to cars for local or intraterminal service. Even when a claim is subsequently paid on a car which they have picked up, they will participate only on the regular mileage basis provided they did 'inspect, clean and repair' the car and make proper record. In adjusting such a prorate claim in many cases the mileage of the switching road is either within the ten-mile minimum prescribed by Freight Claim Rule 28, or is so short that its proportion would be either a nominal amount or so slight as to be eliminated entirely under the dollar minimum debit provided in Rule 158.

"These facts are brought out in detail, because obviously the probability is that any claim assumed by the switching road under these rules would likely be smaller than the additional cross-haul switching expense involved in a process of returning cars empty to the trunk line and ordering empties for return loading."

In some terminals, and particularly in periods of tight car supply, a practice has grown of railroad traffic forces soliciting business by promises to supply empty cars to industries located on connections' rails, provided the soliciting line is given the road haul on the resulting load. Having induced the shipper to order from his serving railroad, or even direct from the road haul line, cars for loads to be routed via such soliciting line, the traffic solicitor then puts all possible pressure upon his local operating people to fill the order, regardless of whether cars of proper ownership are available on his rails.

"Available" Cars

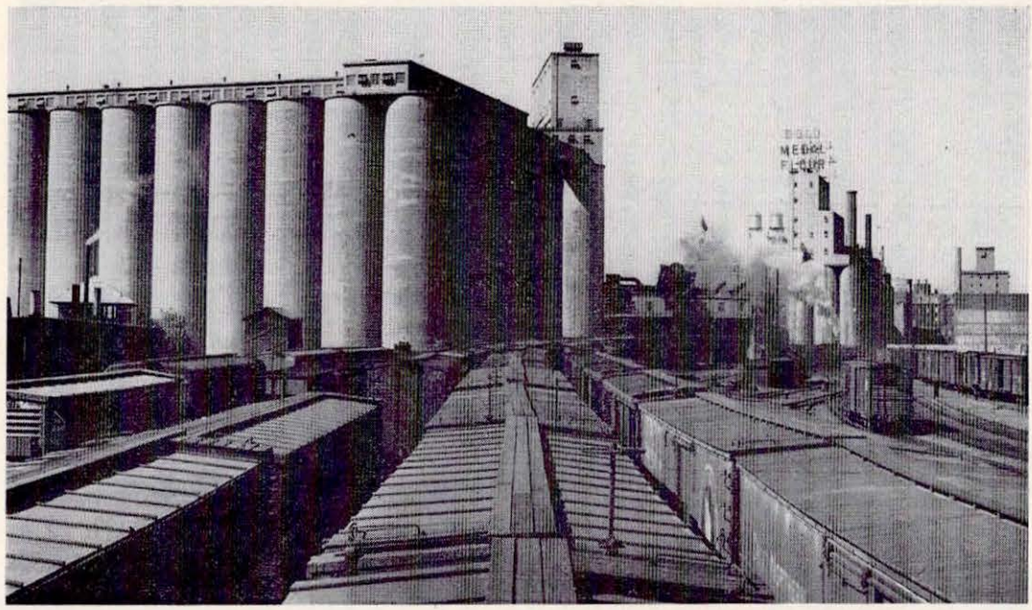
When suitable empty cars are not available on the switch loading line, it is the obligation of the road haul line to furnish cars for loading on its neighbor lines in switch service for movement via the road haul carrier. In the absence of proper ownership cars on the switch loading line pressure by traffic solicitors of the road haul carrier to supply cars may be valuable in bringing fulfillment of this obligation. Nevertheless, it should always be borne in mind that the switch loading line has the obligation to supply such cars when suitable ownerships are available upon that line. "Suitable ownerships" means cars owned by the road haul carrier or other ownerships whose use is in accordance with the provisions of car service rules.

The word "available" also needs some discussion. At times, for example, the roads leading out of the Twin Cities to the Northwest need material help in box car supply to haul grain in from the Northwest. Such help may involve the movement of empty box cars to them, under Car Service Division orders, by eastern roads. These cars move from Chicago via the intermediate roads from Chicago to the Twin Cities. The mere fact that the northwestern carrier may have in the Twin Cities at that time empty box cars of eastern ownership, but which are badly needed by it west of the Twin Cities to equalize distribution and protect grain loadings, would largely negate the "availability" of such cars on the northwestern carrier for use in protecting switch loadings on its rails at Twin Cities for movement east.

In such a situation the northwestern line would be amply justified in insisting that the road haul carrier which is to get the load out of Twin Cities furnish the required number of empty box cars. The northwestern line so situated should be careful to avoid furnishing empty grain box cars to a Chicago-Twin Cities road at Twin Cities for return switch loading for the northwestern carrier's road haul at a time when the same Chicago-Twin Cities road is delivering the same type of car to the northwestern carrier to assist it in car supply.

Generally speaking, the transportation officer of a railroad, working with the local operating officers, should be the one to decide, and without pressure from other departments, when he is in a position to supply proper ownership cars to protect his switch loadings for connections' road haul, and when he must call upon the road haul line to supply cars to fill such orders. (Circular T-71, issued by the Operating-Transportation Division, A.A.R., carries regulations as to furnishing of cars for loading in switching service.)

Fundamentally, every effort should be made by switch loading lines, whether they be trunk lines or purely switching or belt lines, to pick up on their own rails and supply to their industries all possible proper ownership cars to protect their switch loadings. Empty cars should be ordered from connections for this loading only when ownerships properly applicable under car service rules



Especially at grain elevators during the busy season much extra switching will be done if intelligent use is not made of available car supply.

and physically fit to protect the loadings cannot be found on the rails of the switch loading line. Where necessary to secure this result, arrangements should be made by road haul carriers to compensate fairly purely switch and belt lines for the commodity inspection, cleaning, conditioning and light repairing of cars on their rails.

Excessive Switching

There is another practice which is somewhat akin to wasteful cross haul of empties moving for return loading between two roads within a terminal. At times a carrier will pull from terminal industry tracks foreign cars unloaded at the industry and return them empty en masse to country loading areas on the unloading road. At the same time, cars of identical types, ownerships, and physical fitness will be ordered from connections at the unloading terminal and switched in to the same industry, to be loaded for road haul via the line from which ordered.

This extra switching out of and into industries is apt to occur largely at grain elevators at the easterly terminals of western and northwestern railroads, at such points as Chicago, Minneapolis, Omaha and Kansas City. In periods of heavy car demand and actual shortages, and when the yards serving the elevators are overcrowded, any practice which brings about unnecessary and non-productive extra switching in those yards should be avoided. Therefore, it would seem to serve no useful purpose to switch out box cars unloaded at elevators and send them back to the grain loading territory while at the same time ordering cars of identical type and generally the same run of ownerships for loading to the eastern connections and switching them in to the terminal elevators.

In such a situation the sensible and economical practice would be to reload the cars made empty at the elevators, and send out direct to the country loading areas the cars received upon orders.

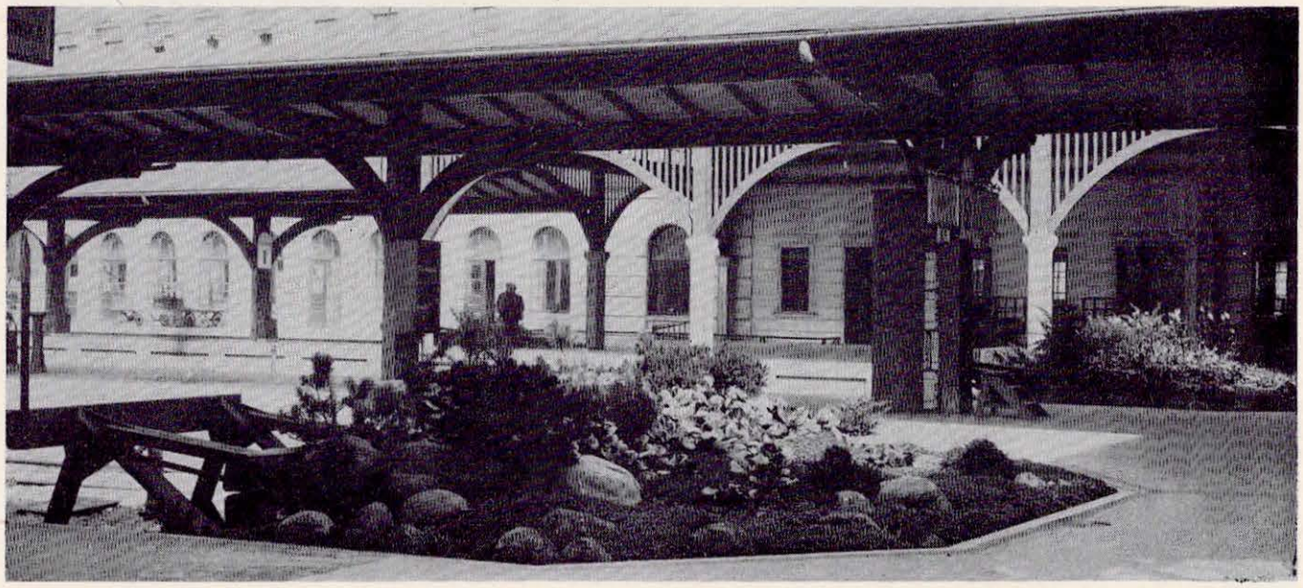
In any period of easy car supply, however, those cars made empty at the elevators which, by reason of ownership, can be reloaded in accordance with car service rules should be so reloaded rather than pulling them empty and ordering other cars from road haul lines to replace them. Under such conditions, cars should be ordered from connections only to the extent necessary to protect the balance of elevator loadings to those roads. In other words, in periods of easy car supply, every effort should be made by western roads to prevent loading of system cars or cars of other western ownerships to easterly destinations. Instead, the practice should be to obtain and use eastern ownerships, even at the expense of added terminal switching at loading terminals.

Some cross hauling in terminals results from originating roads' requesting empties from line haul carriers to avoid being charged with a freight claim if the load is damaged due to defect in the car.

Sometimes, failure to cross haul, especially in periods of adequate car supply, can result in building up many miles of empty road haul.

(All photographs courtesy the American - Swedish News Exchange, Inc.)

Seven plant depots are owned and operated by the Swedish State Railways. This one is just below the Arctic Circle, at Boden, Sweden. The high hedges around the plots protect the smaller and more fragile plants from the winds.



At railroad stations, every available spot not needed for functional purposes is taken over for planting of flowers and shrubs. This plot backs up a bumping post at the end of a spur track.

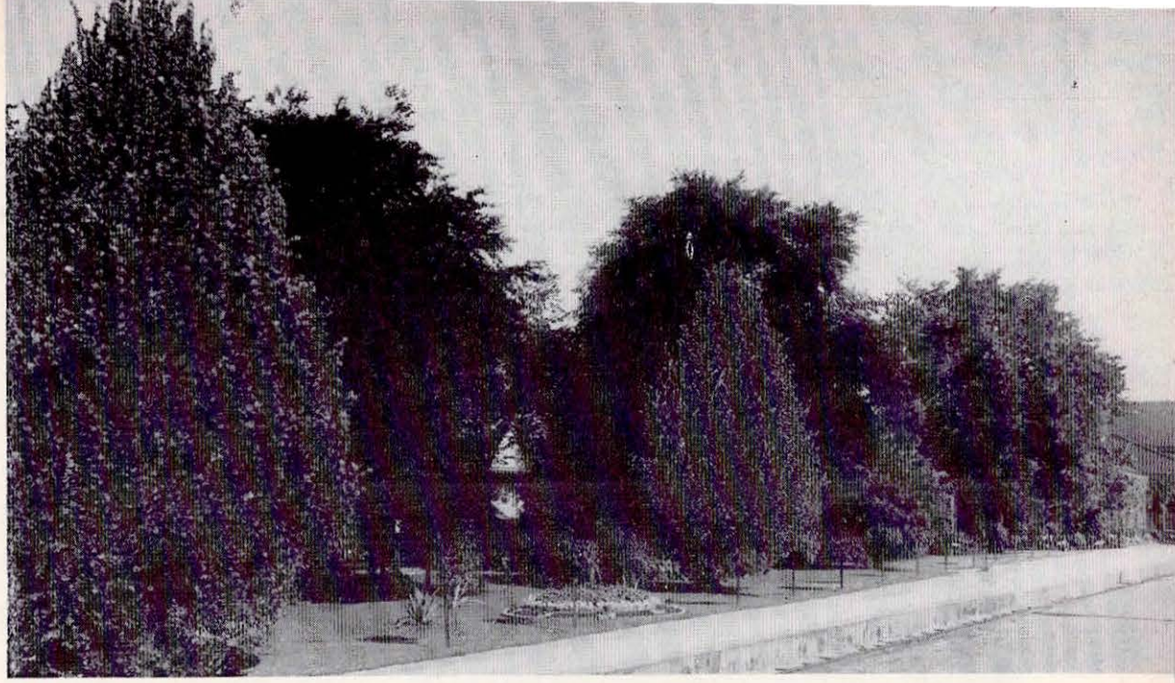
Swedish Stations Are Beautified Gardens

By HOLGER LUNDBERGH

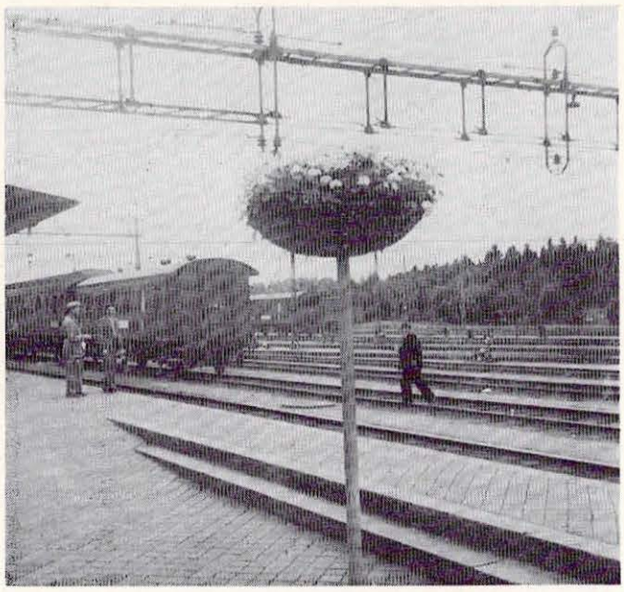
Anyone traveling on the Swedish State Railways for the first time would be surprised to find the station grounds—and many places along the open right-of-way—looking very much like well-kept city parks. Here are to be found beautiful lawns as well tended as the greens of most golf courses, with flagstone walks or gravel paths leading to benches placed in corner retreats, very likely shaded by well-proportioned trees.

Inside the depots, bright plants are apt to be found rising from pots and vats and spilling over hanging baskets suspended from the ceiling or affixed to the tops of pillars or columns. And over the outside walls of the stations, roses and other climbing plants are likely to be seen growing in profusion. Even along the railroad tracks, ramblers and perennials are planted to enhance the appearance and prevent erosion.

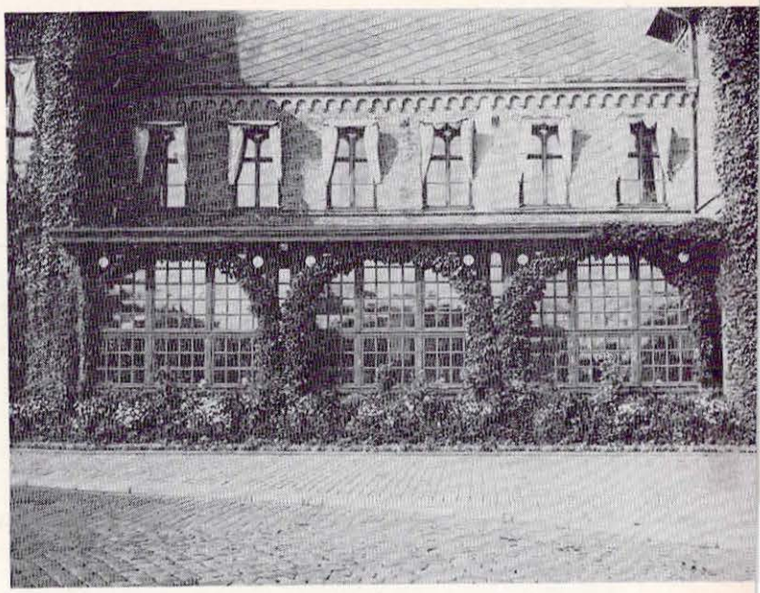
Most travelers, including a vast number of Swedes, take their richness and beauty for granted, and have been taking it for granted for many years. Few persons, whether natives or foreigners, are aware of the fact that the horticultural activities of the Swedish State Rail-



Immediately adjacent to the station platform at Eslöv, in the south of Sweden, is this well-kept lawn landscaped with trees of various kinds and studded with carefully tended flower beds.



Although bricks are not a favorable place for plant growth, flowers can be brought to the platforms by elevated baskets like this one at Angelholm in southern Sweden.



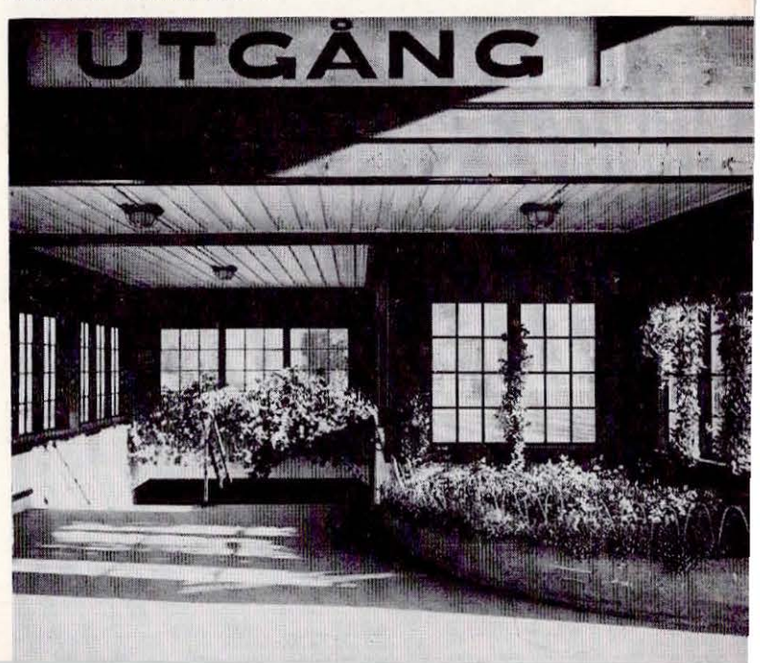
Even the small ground space between the driveway and the station building at Göteborg is planted with flowers and low-growth shrubbery, while vines climb the walls.

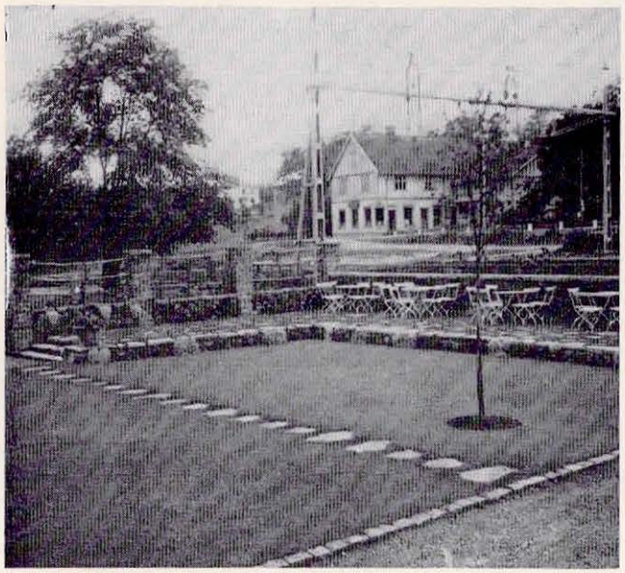
ways go back to 1862, when Dr. Per Olof Eneroth (1825-1881), pomologist and amateur publicist, became employed as the railway's first head gardener, in which capacity he served for 10 years. It was he who laid the foundation for the system of plant schools and greenhouses which today form the seemingly inexhaustible source of supply for the country's hundreds of railway stations. Dr. Eneroth made a specialty of fruit trees and berry bushes, which now constitute a very important part of the annual planting.

How is this unique service organized? The personnel, to start with, consists of a director (the incumbent, who has served since 1938, is Gosta Reuterswärd), eight head gardeners—of whom seven are in charge of an equivalent number of plant depots, while one works in the director's office in Stockholm—and 32 gardeners, stationed at the various sections into which the country's railway net is divided. Other personnel numbers 30.

It is obvious that this small staff would never suffice

Plants that do not require too much direct sunlight are used to beautify the interiors by planting them in urns, vases, hanging baskets, or in unused areas, as here inside the Stockholm Central station.





The Swedish people have an innate love for flowers and plants, so flagstone walks and benches are placed to enable the people to enjoy all parts of the gardens without danger of trampling or harming the plants.

Pools built in secluded portions of the gardens are important in plans for beautifying station grounds.

for the work that has to be done, month in and month out, through the years, regardless of the individuals' skill, efficiency and devotion to duty. What makes this service so remarkable is the fact that the railway employees themselves are almost entirely responsible for the upkeep of the gardens and the renewal of plants and flowers within the depot areas. Station masters, telegraph operators, signalmen, track walkers, section men—all regularly do their share in their spare time to maintain the plants and shrubs. The annual budget for the railway administration's horticultural department is about one and one-half million kroner (about $300,000)—a small sum in itself and one which yields a more handsomely visible dividend than many other governmental agencies. However, in pointing out that less than 80 per cent of this sum is set aside for wages and salaries, the administration with justifiable pride emphasizes that "in these costs has not been included the work which the station employees themselves have performed for the care and maintenance of the gardens."

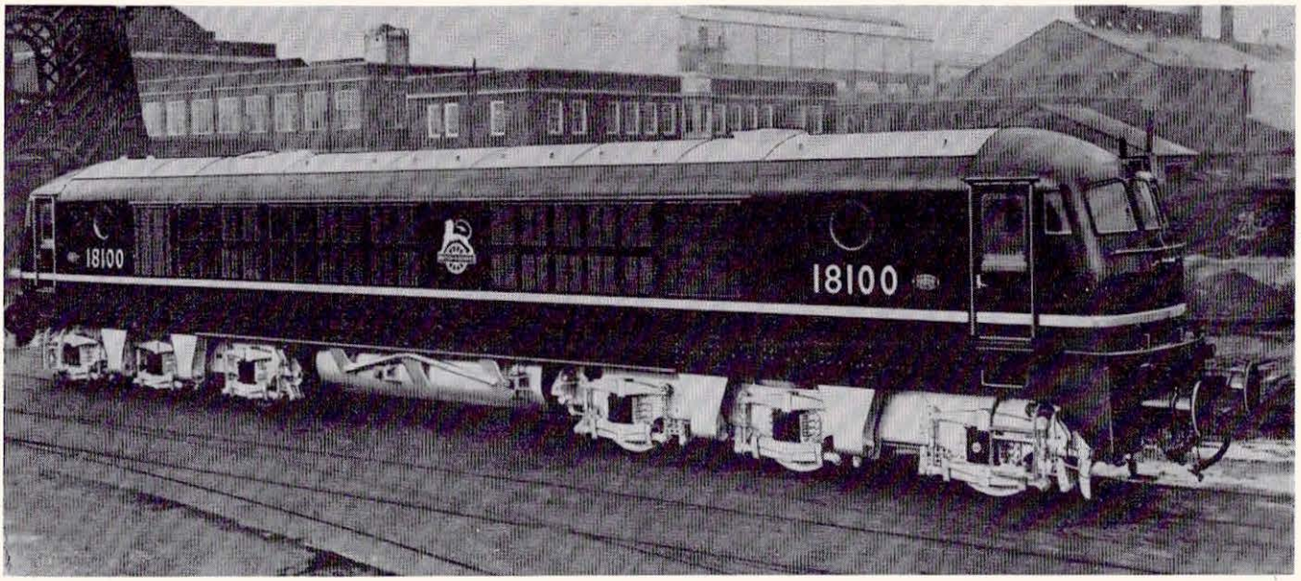
How and why is this still possible? I might venture a word of explanation. The Swedes are inveterate and respectful worshippers of flowers and every growing thing. Their winters are long and from the first day of spring until the last days of autumn, the Swedes live outdoors as much as their work and the weather permit, and, in their outdoor life, working in a garden plays a vital role to hundreds of thousands. Swedish homes always surprise foreign visitors by the abundance of flowers and living plants that they display. When the Swede cannot be out of doors, he likes to bring nature with him into his living room. I think it can be said without much exaggeration that more or less all Swedes have a "green thumb."

Public Cooperation Is Assured

Another explanation of this voluntary labor of love which the railway personnel performs is that the Swedish public, by training and instinct, backs up their efforts and not only has an affection for flowers, but also has a neatness and tidiness which is innate and national. Of course, there are careless and negligent Swedes, who heedlessly break laws and city ordinances. However, taking the people as a whole, it must be said that the desire for cleanliness and order is very firmly rooted in the Swedish mind. It is, for example, almost unheard of that flowers are picked from garden spots at railway stations. By the same token the walks beneath the shade trees are not littered with newspapers, cigarette packages, candy wrappers, etc. Neither are the benches defiled by carving of initials. With this kind of civic-mindedness and respect, it is easier for the employees to go about their daily tasks.

The railways have in all seven plant depots scattered over the country. In addition, there are smaller plant schools at the majority of the 36 railway sections. The plant depots have more than 4,200 frames, of which less than 2,000 are cold frames and the rest artificially heated by electric cables or hot-water pipes. During the decade 1939-1949, the following numbers of flowers, bushes, and trees were planted: 1,800 fruit trees, 3,880 berry bushes, 2,000 leafy and coniferous trees, 10,600 park bushes, 12,710 hedge plants, 940 clinging plants, 80,000 perennials, 23,000 rose bushes, and 350,000 other flowers and plants. During the years, a total of about 110,000 fruit trees and 175,000 berry bushes have been planted.

Railway station gardening begins early in the spring, when three freight trains, of 70 cars each, fully loaded with bushes and plants, set out in different directions to distribute their floral wealth among the depots. In addition to the waiting rooms and restaurants, the rest homes of the personnel and hundreds of railway offices are regularly supplied with cut or potted flowers from the plant depots. Also, a lively exchange of plants with foreign countries is carried on, and new varieties are constantly being added.



The British Railways gas-turbine locomotive develops 2,500 hp. at the rail

British Railways Acquire A Gas-Turbine Locomotive

By E. C. POULTNEY
M. Inst. Loco. E.

A 3,000-hp. oil-burning turbine delivers 2,-500 hp. at rail through electric transmission—Maximum tractive force, 60,000 lb. —Unique suspension of body on trucks

A gas-turbine locomotive has recently been completed and delivered for passenger service on the Western Region of the British Railways. Designed and built by Metropolitan-Vickers Electrical Company, it is the second locomotive of this type to be placed in traffic in England. The first locomotive was delivered during the early part of 1950. The motive power equipment of this locomotive was furnished by British Brown-Boverie, Ltd., and built by Brown-Boverie, Baden, Switzerland, while the mechanical parts were supplied by the Swiss Locomotive & Machine Works, Winterthur. This locomotive was described in *Railway Age* September 23, 1950, page 22.

The Metropolitan-Vickers locomotive is considerably larger than the former design, and is the first locomotive of this kind to be built in Britain. Ordered by the former Great Western Railway for heavy main-line passenger traffic, the work has been carried forward by the Railway Executive, British Railways, under the direction of R. A. Riddles, member for mechanical and electrical engineering.

The complete power plant is enclosed in the body structure, with driving cab at each end. It is carried on two trucks by swing links resiliently attached by rubber universal joints to permit controlled swing-bolster action and truck pivoting, without the use of actual bolsters which would have required more space than was available.

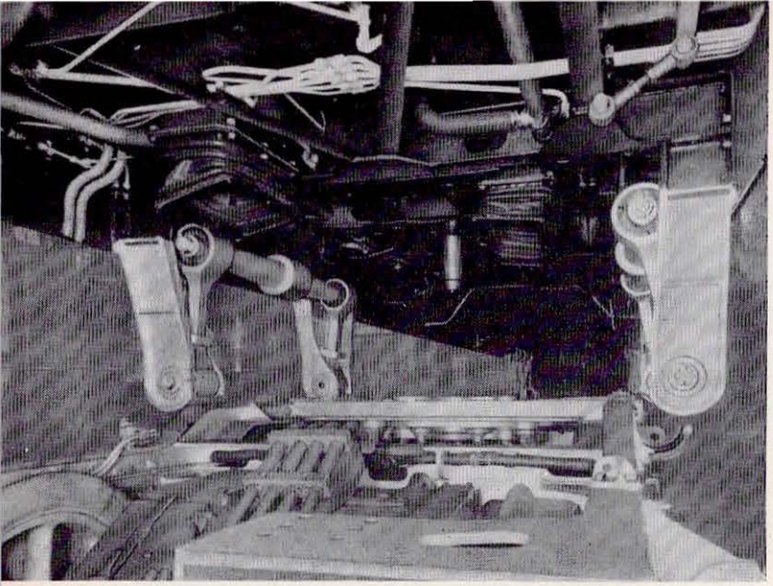
Driving Axles

Each truck has three driving axles, each driven by a traction motor suspended on the axle and from a support on the truck frame.

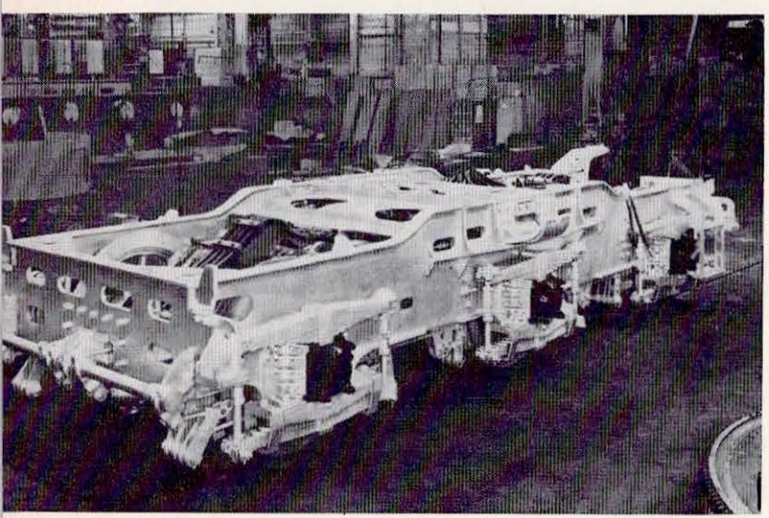
The turbine rotates at 7,000 r.p.m. when delivering full load, and drives three main traction generators at 1,600 r.p.m. through single reduction gearing. The reduction-gear unit has two output shafts; one drives two of the main generators in tandem and the other drives the third main generator, the auxiliary generator and the exciter. The turbine, reduction gear and group of generators are mounted on a common bedplate together with the main fuel and lubricant pumps and constitute a self-contained power unit which is installed in the locomotive body on three support points on its main underframe.

Each of the three main generators supplies two of the six traction motors. The motors of each pair are connected permanently in parallel.

From the turbine output of 3,000 hp. an allowance of



The body is suspended on the truck by links with universal rubber joints in the ends and an equalizer with a rubber cylinder in the center through which the load is delivered to the truck brackets.



Each axle of the truck is motor driven. Springs are in tandem at each journal box.

about 150 hp. provides for the loss in the reduction gear and the demands of the locomotive auxiliary equipment, leaving 2,850 hp. input to the traction generators. Over most of the speed range of the locomotive an electric transmission efficiency of about 86 per cent is achieved corresponding to 2,450 hp. at the rails.

A turbine full-load thermal efficiency of 19 per cent has been demonstrated on test. When account is taken of the gear and electrical losses, the overall thermal efficiency of the locomotive becomes 16 per cent. After deduction of the 75 hp. required for auxiliaries, the remaining traction power available at the wheels represents 15½ per cent of the heat value of fuel consumed or a fuel rate of 0.88 lb. per hp.-hr. At half power this rate will rise to about 1.3 lb. The general dimensions are shown in the table.

The Gas Turbine

The prime mover is a simple open-cycle gas turbine without heat exchanger. The cycle of compression, heating and expansion of the air is carried out in a compressor, combustion chamber and turbine arranged in line and built into a single straight-through unit.

The compressor is a 15-stage axial-flow machine with a pressure ratio of 5.25 at 7,000 r.p.m. and a mass flow of 50 lb. per second. It runs in two sleeve bearings. The turbine is a five-stage unit also running in two sleeve bearings and its rotor is directly coupled to that of the compressor.

The combustion chamber is composed entirely of heat resisting steel and consists of six flame tubes with axes parallel to the machine axis and connected by flexible connection pieces at one end of the compressor outlet and at the other end to the turbine inlet. The compressor and turbine cylinders are connected together by a tubular member surrounding their shaft coupling so that they constitute a single structural unit on which the combustion chamber is mounted.

Cooling Methods

The compressor bearings are lined with white metal and lubricated and cooled by a copious supply of lubricating oil under pressure. Compressed air is taken from an intermediate stage to a balance piston at the inlet end for the purpose of balancing the end thrust of the combined rotors.

The turbine bearings are of design similar to those of the compressor but additional cooling is provided by a flow of compressed air from an intermediate stage of the compressor.

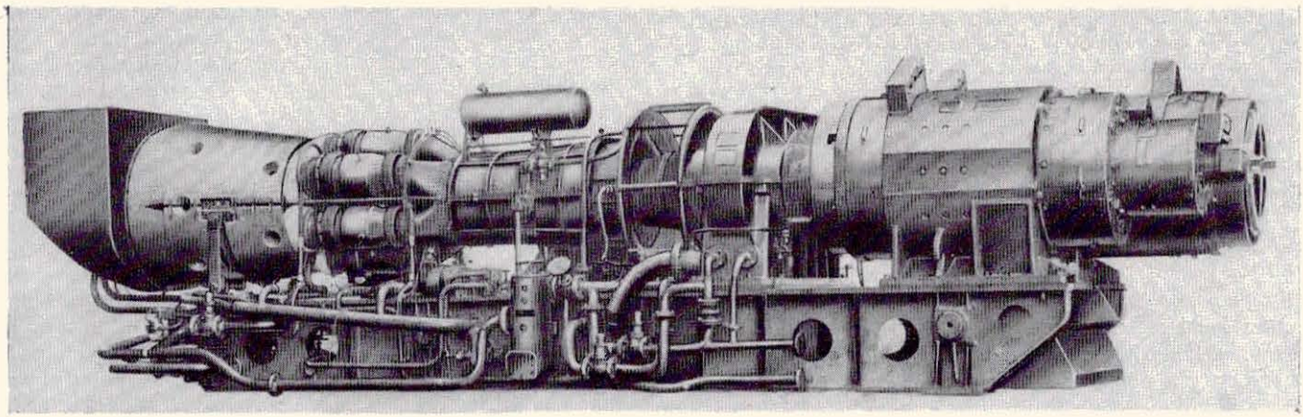
Each of the six flame tubes of the combustion chamber is secured by quickly detachable unions to the compressor and turbine. The flame tube has an outer casing and inner primary chamber, both fabricated from austenitic heat-resisting sheet steel. By means of metering orifices the correct proportion of the air flow is introduced into the primary to give correct combustion of the fuel fed in at about 650 lb. per sq. in. from the fuel jets. The remainder of the air is mixed with the high-temperature products of combustion downstream of the jets so as to produce the designed temperature at the turbine inlet. Each flame tube has a double fuel injector with a small jet orifice for idling fuel and a large one fed from the main fuel valve. Two flame tubes are fitted with igniters, in the form of high-tension spark plugs combined with pilot-flame fuel jets. Ignition spreads to the other flame tubes through tubular connections between each pair of casings.

Acceleration

When starting, the turbine is accelerated up to a self-sustaining speed by the main generators acting as motors fed from the starting battery. After the engineman has actuated the starting button the process is entirely automatic. The time from pressing the start button until the turbine starts to turn is 10 seconds; a further 25 seconds elapse until the battery disconnects, and idling speed is reached in a further 30 seconds.

After stopping the turbine an automatic barring sequence comes into operation which motors the turbine round for a few seconds at intervals of about three minutes to equalise the cooling stresses. An auxiliary lubricant pump circulates oil round the turbine bearings throughout the cooling period, and is automatically stopped by a bearing thermostat at the appropriate time.

Throughout the operation of the locomotive, the turbine and generator are governed electrically to give the output selected by the driver on the master controller, and at the turbine speed for most efficient operation at that load. This electrical governing meets all normal working conditions and over-riding controls come into operation in the event of excessive turbine speed or gas



The 3,000-hp. Metropolitan-Vickers gas-turbine power plant for the British Railways locomotive. From right to left are the generators, the reduction gear unit, the air intake, the compressor, combustion chambers, the gas turbine, and the gas exhaust connection to the locomotive roof.

temperature, excessive bearing temperature, or low fuel or lubricant pressures.

Generators and Motors

Each main generator is a self-ventilated direct-current six-pole, compensated interpole machine. The ratings are: continuous, 1,100 amp., 666 volts, 1,600 r.p.m.; one-hour, 1,250 amp., 580 volts, 1,600 r.p.m.; maximum voltage, 825 volts; maximum current, 2,200 amp.

The auxiliary generator and exciter are also self-ventilated direct-current machines. The former has six main poles and interpoles and is shunt excited under the control of a voltage regulator to give 110 volts irrespective of its load and the turbine speed. The exciter has six main poles and interpoles and is excited by three windings—a separate excitation fed from the 110-volt auxiliary mains, a separate excitation regulated by the automatic output control gear and a reverse compound excitation directly proportional to the main-generator total-load current.

The six traction motors are separately ventilated four-pole series and interpole machines. Each is carried on its axle by plain suspension bearings and has roller bearings on its armature. The nose side of the motor yoke is suspended from the adjacent truck transom by a link with a rubber resilient bush at each end. This form of suspension gives the necessary freedom of movement without the wear associated with the more conventional nose suspension arrangements.

The ratings of the motors are: continuous, 550 amp., 666 volts, 706 r.p.m. (33.5 m.p.h.); one hour, 650 amp., 565 volts, 580 r.p.m. (27.5 m.p.h.); maximum current, 1,100 amp.; maximum voltage, 825 volts.

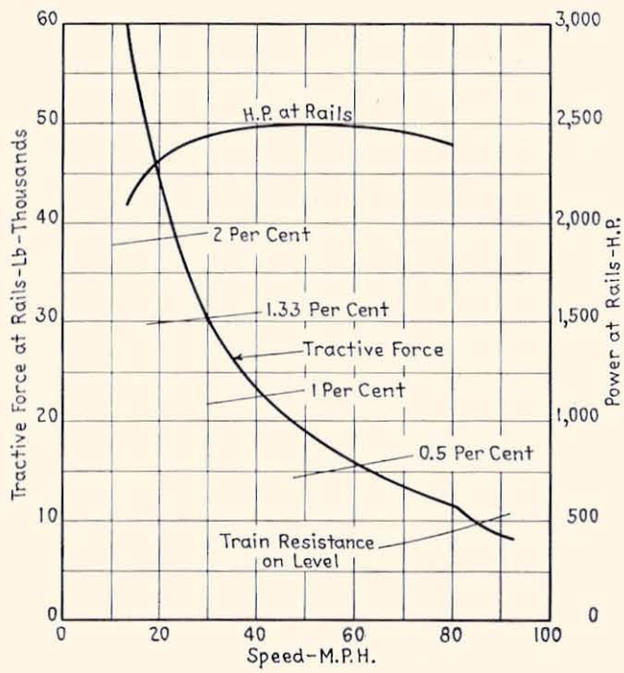
The drive to the axle is by single-reduction spur gearing of 21:58 gear ratio. The gear wheel incorporates torsional resilience.

The Control

The main function of the control equipment is to provide means for the engineman to control the speed of the train by regulating the tractive force developed at the wheels. At the cost of some elaboration of apparatus the control scheme has been designed to require from the engineman the minimum of concern and responsibility for the functioning of the power plant and auxiliaries.

The procedure on taking over the locomotive in terminal or siding is extremely simple, consisting of the following operation: (a) operate the key switch; (b) press the turbine start button and when the green light appears one minute later (indicating that the turbine is running at idling speed) switch on the brake compressor and exhausters.

The locomotive is ready for service after about five minutes warming period if the start has been from cold. To move the locomotive, either light or with its load, the brakes are released, the reversing lever of the master controller is moved to the direction required and the



Train consist: 18 coaches, 730 tons; locomotive, weight 146 tons. Total weight, 876 tons.

Tractive-force and horsepower of the British Railways gas-turbine locomotive vs. train resistance.

GENERAL DIMENSIONS OF THE BRITISH RAILWAYS OIL-BURNING GAS-TURBINE LOCOMOTIVE NO. 18100

Continuous rating of turbine, hp.	3,000
Number of axles	6 (all driving)
Weight in working order, lb.	288,980
Maximum service speed, m.p.h.	90
Tractive force, lb. (max.)	60,000
Tractive force, continuous rating, lb.	30,000
Length over buffers, ft.-in.	66—9¼
Width, ft.-in.	9—0
Height from rail, ft.-in.	12—10
Wheel diameter, in.	44

power lever set to the position required. This lever has no notched positions but can be set and left at any position between no power and full power. The engineman is not required to notch up this lever as the train speed rises; he may do so if he so wishes but may equally well put it directly in the position he expects ultimately to require.

Structure and Running Gear

The body and underframe are built together as a single unit almost entirely by welding. The principal members are the two side sills, consisting of continuous plates of deep section, reinforced by top and bottom welded flanges and tied together at each end by the welded end-sill structures. The sills are bolted to the main supporting structures, which are welded assemblies, at the truck center locations; elsewhere they are cross braced by a lattice of rolled-steel sections and by the floor plate. At side-plate height a well ribbed curved plate section of the roof forms a rigid top chord running on each side from end to end of the body except the cabs. At each end the driving cab walls and roof, in the form of a separate welded aluminum alloy structure, are mounted on the underframe platform.

The trucks also are all-welded assemblies constructed from steel plates. The side frames are connected across the ends and by two transom members also of steel plate, all welded.

Each complete truck frame and each main welded sub-assembly of the body structure was stress relieved in an annealing furnace.

The body is suspended by swing links from the trucks. There are eight of these links—two on each side of each truck and outside the truck frames. Each link end contains a rubber universal joint without any metallic contact between the elements. The lower joint is, in each case, attached to the lower end of the body support brackets and pairs of upper joints are attached to longitudinal equalizing beams. At the middle of each beam is a rubber universal joint resting in the corresponding truck support bracket.

Rubber Joints

The resilience of the rubber joints permits the necessary relative angular motion between body and trucks about the vertical and transverse axes and also the degree of lateral relative movement necessary for good high-speed riding. The restoring forces are mainly those due to gravity; those arising from deformation of the rubber are relatively small, but they provide a measure of damping against hunting. More effective damping is provided by hydraulic dampers located at four points on each truck and connected between the body underframe and truck frames by links with universal rubber joints. These resist lateral displacements and vertical axis rotation of the trucks in relation to the body with forces which are functions of the rate of movement.

The longitudinal reactions between the body and trucks arising out of traction and braking forces are taken through a pivot pin on the body which carries a parallel-motion linkage coupled to the truck transoms and equipped with rubber universal joints. This does not interfere with any of the other relative movements between body and trucks.

The use of rubber at the points of relative movement dispenses with the necessity for lubrication and eliminates wear of metallic surfaces, substituting the renewal of standard rubber joint units at intervals which experience indicates are likely to be lengthy. A further feature of the rubber joints is the complete interruption of metallic connection between body and trucks.

Roller bearing journal boxes are of the Hoffman type with two rows of rollers and one row of balls for end location; they are oil lubricated.

The high degree of flexibility of springing, which is another requirement for high-speed running, is achieved by the use of two springs in series at each journal box, one above and the other below the box. This novel arrangement has, it is considered, the additional advantage of eliminating spring-hanger wear.

Auxiliaries

The train brake equipment is the automatic vacuum type, but space considerations have necessitated the use of the Westinghouse brake on the locomotive. A two-cylinder single-stage air compressor supplies air for the locomotive brakes, electropneumatic control apparatus, sanding, warning horns, and window wipers. There are also two reciprocating four-cylinder exhausters which provide power for the train brakes.

The auxiliaries are electrically operated from a 110-volt d.c. supply from the auxiliary generator, or by a battery. The latter consists of 48 lead-acid cells of 384-amp.-hr. capacity.

Other auxiliaries include main fuel and lubricant pumps driven by a single motor. There are two sets, one of which stands by but is cut in automatically in case the other fails. An auxiliary fuel pump supplies fuel from the fuel tank to the main pump.

The three traction motors in each truck are cooled by a centrifugal blower, ducts from which are connected to the motor by leather bellows. Steam for train heating is supplied by a vertical firetube oil-fired boiler, continuously rated at 1,500 lb. per hr. at 80 lb. per sq. in. Operation is semi-automatic.

The 40,000 cu. ft. of air per min. required by the turbine at full load is drawn through filters in the side walls of the turbine compartment. These are the dry fabric type and can be cleaned by reverse blowing in position by compressed air nozzles on flexible pipes provided in the turbine compartment. It is expected materially to reduce the rate of compressor-blade fouling, but not to eliminate the need for cleaning.

Oil-cooling radiators in the side walls of the locomotive body dissipate the heat carried away from turbine bearings and the reduction gear in the lubricating oil. Ducts from the radiators lead to an exhaust fan mounted in the roof.

Auxiliary equipment in the cabs include pneumatically operated window wipers, electric foot warmers, an electric food heater, and cab ventilation equipment, with thermostatically controlled electric heating elements.

There is a combined fuel and boiler water tank. This is of elliptic cross-section, constructed of welded steel plate, with a capacity of 995 gal. of fuel and 620 gal. of water.

Letter from a Reader . . .

The St. Lawrence

TOLEDO 4, OHIO

TO THE EDITOR:

As a railfan, a railway booster all my life, and a member of the Toledo-Lucas County Port Commission, I am addressing you in a vein critical of two sentences in your paragraph on the St. Lawrence Waterway, on page 9 of the March 10 *Railway Age*.

The first is an inference that the waterway, "frozen tight for five months," might injure rails or east coast ports. The second is a statement, based upon complete ingnorance or downright denial of the provable fact that 80 per cent of ships visiting east coast ports draw 24 or less feet of water.

On page 16, Walter J. Kelly, A.A.R. vice-president, states in the third paragraph, "there is 'no reasonable possibility' that the seaway could be made self-liquidating by the imposition of tolls"; then you follow with a statement by Secretary of Commerce Sawyer that there is " 'every indication that a moderate schedule of tolls . . . will more than support the project'." Whom can we believe?

Then, the first two paragraphs of editorial comment, on page 35, offer much to the imagination, which—added to the fact that the rails have completely abandoned all short haul freight and passenger service for speed and palatial trains, through lack of imagination—is not helping the rails' problem.

Nearly everyone will admit the rails are being persecuted in all directions by a socialistic administration, but many feel they have brought this condition upon themselves; if you could but see through the trees in your own forest you could not deny the fact.

Now hear some startling data: During the 1951 marine shipping season, foreign ships made 36 calls at the port of Toledo—a prominent coal and ore port, of whose record the C. & O., the B. & O. and the N.Y.C. are justly proud. Of these 36 cargo calls most were for l.c.l. items that could not have harmed the rails to any great extent.

Yet in spite of navigational hazards that presently impede progress through the St. Lawrence, along with limited cargo handling facilities in Great Lakes ports, foreign shippers have guaranteed to double and even treble cargo calls by their vessels, in a short time, even without completion of the Seaway.

Your own judgment must tell you that project is bound to come and, like the Panama Canal, will in all likelihood increase distribution traffic for our rails.

Why don't you lower the boom on your own hysterical attitude and come up to date—the Wills of Progress will not be denied.

E. H. FORSTER,
President, Great Lakes Foundry & Machine Corp.

[As to the Seaway not hurting the railroads when it is "frozen up for five months"—the railroads are expected and required to maintain their facilities on a 12-months basis. It is the old problem of who's going to pay for the "stand-by" railroad plant during the months when the Seaway is open—like the people who insist that passenger service be not abandoned on a branch line. They don't use the train unless the roads are icy, but they want the train kept there for those particular days.

As to whether Secretary Sawyer or Walter J. Kelly is the more reliable authority on transportation questions—Mr. Kelly has been in transportation work ever since he was 14 years old. Secretary Sawyer has never been in it.

The Panama Canal provides no parallel to the proposed Seaway, since the Panama Canal has a direct connection with national defense (e.g., for the expeditious intercoastal movement of naval vessels) which the Seaway does not. The fact that the Seaway might service some defense industries in the Great Lakes area has no bearing on defense because, the fact is, these industries have developed their present strength without the Seaway and none of them is going to be junked if it isn't dug.

The *Railway Age* position is that the Seaway will not provide transportation, all costs included, as economically as the railroads could provide it—hence that the Seaway will reduce rather than add to the national wealth and income.

The way to take this project out of controversy would be for the two governments to say: "We aren't going to build it, but we will seriously consider granting a franchise to any private corporation which wants to take on the job." The fact that private capital does not seem to be interested is, to us, prima facie evidence that the project is not economically justifiable.

We concede that little political weight is exerted by the fact that the Seaway is not supported by the principles of free-market and non-socialist economics. Some of the most ardent advocates of this project are industrial leaders who are vocally loyal to sound economics and are unalterably opposed to socialism—but rather in the abstract than the concrete.—EDITOR]

EUROPEAN RAILROAD REPRESENTATIVES, now in the United States to study operating methods of American railways, confer in New York with members of the European Travel Commission and officials of the Organization for European Economic Cooperation. Left to right are: Fernand J. Martens, official Belgian Tourist Bureau, vice-chairman of the European Travel Commission; Jules Hone, representative in Canada, French National Railroads; Arne Sjoberg, deputy to vice-president chief research economist, Royal State Railway Board, Sweden; Dr. G. Bergmann, director, Ministry of Transport, Germany; Professor Nicola Laloni, traffic and commercial director of the Italian State Railways and chairman of the Information Center of European Railroads; G. Tieri, official representative in the United States, Italian State Railways; Arturo Favara, chief inspector, assistant to traffic manager, Italian State Railways, Rome; Angiolo Nastrini, inspector, Italian State Railways, Rome; and Birger Nordholm, Swedish National Travel Office, E.T.C. chairman.

Purchases of Class I Roads Totaled $2,175,859,000 in 1951

Class I railroads in 1951 spent $2,175,859,000 for fuel, materials and supplies of all kinds used in connection with their operations, the Association of American Railroads announced on April 14. This was the largest amount expended in any year on record by Class I roads for such purposes, with the exception of 1948, when they spent $2,183,331,000 due to the fact that their fuel bill in that year exceeded 1951 by $211,543,000. The amount spent by Class I railroads in 1951 for fuel, materials and supplies of all kinds exceeded 1950 by $435,951,000.

For fuel alone they spent $621,497,000 in 1951, compared with $608,719,000 in 1950. Expenditures for bituminous coal and anthracite coal totaled $277,012,000 in 1951, a reduction of $45,995,000 compared with 1950. Expenditures for diesel fuel oil totaled $228,893,000, an increase of $56,952,000 compared with 1950. Expenditures for iron and steel products of all kinds in 1951 amounted to $703,885,000, compared with $509,506,000 in 1950. Purchases of track material such as steel rails, frogs, switches, track fastenings, totaled $238,485,000 in 1951, an increase of $37,301,000 compared with 1950. Car forgings, iron and steel and fabricated or shaped steel for passenger and freight cars totaled $50,691,000, an increase of about $21 million above the preceding year. Locomotive and car castings, beams, couplers, frames and car roofs amounted to $107,773,000 compared with $76,152,000 in 1950.

ANNUAL PURCHASES OF MATERIALS AND SUPPLIES (EXCLUDING EQUIPMENT) 1923-1951

Class I Railroads (Thousands of dollars)

Year	Fuel	Forest products	Iron and steel products	Miscellaneous	Total	Total less fuel
1923	$617,800	$232,511	$464,955	$423,437	$1,738,703	$1,120,903
1924	471,656	180,872	365,610	324,917	1,343,055	871,399
1925	459,465	170,305	419,255	343,018	1,392,043	932,578
1926	473,354	186,291	507,302	392,085	1,559,032	1,085,678
1927	438,821	175,729	407,304	374,074	1,395,928	957,107
1928	384,608	160,794	374,575	351,364	1,271,341	886,733
1929	364,392	157,551	406,962	400,630	1,329,535	965,143
1930*	306,500	134,600	304,700	292,700	1,038,500	732,000
1931*	244,500	76,250	188,600	185,650	695,000	450,500
1932*	178,250	52,200	94,550	120,000	445,000	266,750
1933	180,526	42,442	104,327	138,555	465,850	285,324
1934	217,294	64,271	150,671	167,988	600,224	382,930
1935	232,723	57,367	135,397	167,538	593,025	360,302
1936	272,270	76,683	239,486	214,982	803,421	531,151
1937	294,293	104,707	310,658	256,725	966,383	672,090
1938	243,783	56,968	127,141	155,390	583,282	339,499
1939	257,273	69,971	236,338	205,732	769,314	512,041
1940	273,556	82,185	264,480	234,242	854,463	580,907
1941	349,765	103,771	379,951	327,787	1,161,274	811,509
1942	426,335	115,227	353,957	364,292	1,259,811	833,476
1943	527,296	150,255	339,631	377,099	1,394,281	866,985
1944	585,832	158,957	431,692	434,048	1,610,529	1,024,697
1945	555,155	136,962	418,438	461,849	1,572,404	1,017,249
1946	553,153	148,984	416,303	452,115	1,570,555	1,017,402
1947	691,630	171,592	503,965	542,022	1,909,209	1,217,579
1948	833,040	166,488	590,289	593,514	2,183,331	1,350,291
1949	564,159	142,232	454,079	480,936	1,641,406	1,077,247
1950	608,719	121,256	509,506	500,427	1,739,908	1,131,189
1951	621,497	188,186	703,885	662,291	2,175,859	1,554,362

*Railway Age estimates.
Note: "Iron & Steel products" and "Miscellaneous," 1927-1948, revised to conform with report MS-24, Year 1949.
Source: Reports of the carriers to the Bureau of Railway Economics.

PURCHASES OF FUEL, MATERIALS AND SUPPLIES—Railways of Class I—Calendar Years 1951 and 1950

Item	1951	1950
FUEL:		
Bituminous coal	$272,301,000	$317,927,000
Anthracite coal	4,711,000	5,080,000
Fuel oil—Residual	98,014,000	93,402,000
Fuel oil—Diesel	228,893,000	171,941,000
Gasoline	8,993,000	8,257,000
All other (coke, wood, fuel for illumination)	8,585,000	12,112,000
Total fuel	$621,497,000	$608,719,000
FOREST PRODUCTS:		
Cross ties (treated and untreated)	$ 94,879,000	$ 55,736,000
Switch & bridge ties (treated & untr.) and timber	27,878,000	17,451,000
Lumber (equipment, rough and finished)	50,489,000	38,932,000
Other forest products	14,940,000	9,137,000
Total forest products	$188,186,000	$121,256,000
IRON AND STEEL PRODUCTS:		
Steel rail (new and second hand, except scrap)	$102,961,000	$ 99,123,000
Wheels, axles and tires	71,347,000	52,482,000
Frogs, switches and crossings, and parts of same	38,080,000	23,175,000
Track fastenings, track bolts, spikes, etc.	97,444,000	78,886,000
Iron bridges, turntables, & struct. steel, all kinds	8,049,000	7,147,000
Bar iron and steel, spring steel, tool steel, unfabricated rolled shapes, wire netting and chain, except light coil; boiler, firebox, tank, and sheet iron and steel, all kinds	77,765,000	41,241,000
Forgings and pressed steel parts for locomotives	5,109,000	3,029,000
Car forgings, iron and steel, and fabricated or shaped steel, for passenger and freight cars	50,691,000	29,899,000
Flues and tubes for locos. & stationary boilers	7,750,000	5,161,000
Bolts, nuts, washers, rivets, lag screws, pins & studs	19,825,000	14,691,000
Springs, helical and elliptical, all kinds for locomotives and cars	7,264,000	4,538,000
Locomotive and car castings, beams, couplers, frames and car roofs	107,773,000	76,152,000
Track and roadway tools, all kinds, including hand and power operated tools, miscellaneous roadway material and fencing. Motor, hand, push and trailer cars, and parts for same	20,137,000	14,107,000
Machinery and repair parts	29,329,000	19,943,000
Boilers, and all other iron and steel products including pig iron	7,533,000	6,315,000
Pipe, iron and steel, and fittings, all kinds	15,507,000	9,170,000
Hardware, all kinds, including nails	11,543,000	7,828,000
Hand & small machine tools, such as drills, taps, reamers, dies, chasers, including air tools & parts	19,025,000	12,913,000
All other iron and steel products	6,753,000	3,706,000
Total iron and steel products	$703,885,000	$509,506,000
MISCELLANEOUS:		
Cement	$3,917,000	$3,928,000
Lubricating oils and grease, illuminating oils; boiler compound; waste	48,649,000	38,605,000
Non-ferrous metal and non-ferrous metal products	53,256,000	39,362,000
Ballast	27,622,000	22,327,000
Electrical materials including electrical materials for diesel locomotives	59,850,000	41,551,000
Stationery and printing	36,251,000	28,777,000
Commissary supplies for dining cars & restaurants	46,924,000	39,435,000
Rubber and leather goods	18,039,000	11,840,000
Glass, drugs, chemicals, including chemicals for timber treatment; painters' supplies	54,577,000	47,528,000
Arch brick for locomotives	4,212,000	3,741,000
Passenger car trimmings	20,170,000	12,912,000
Locomotive, train and station supplies	35,202,000	25,525,000
Interlocking and signal material	50,591,000	34,242,000
Telegraph, telephone and radio material	18,729,000	11,571,000
Air brake material	31,887,000	20,435,000
Standard & spec'l mechanical appliances for loco.	18,299,000	13,368,000
Automotive equip. & supplies, except diesel elec.	17,424,000	14,771,000
Diesel locomotive material—not electrical	76,962,000	53,693,000
All other miscellaneous purchases	39,730,000	36,816,000
Total miscellaneous purchases	$662,291,000	$500,427,000
Grand total	$2,175,859,000	$1,739,908,000

Source: Reports of the carriers to the Bureau of Railway Economics.

I.C.C. Finds Railroad Earnings "Substandard" . . .

Rate Increase Authorized

Additional Ex Parte 175 freight-rate increases have been authorized by the Interstate Commerce Commission in a report which said the approved adjustment was "substantially" that sought by the railroads. The commission made this statement despite its stipulations that increases on such important traffic as coal, iron ore and grain be less than the proposed basis, and its call for more "hold-downs" than the carriers contemplated.

Moreover, a notice issued by the commission to summarize the decision said these modifications of the carriers' proposal would require that railroad and Department of Commerce estimates of the prospective yield be shaded only "slightly." The railroad estimate cited in this connection was that which put the prospective annual yield on the basis of estimated 1952 traffic at $678 million. The Department of Commerce estimate, on a like basis, was $704 million.

The commission's decision came out of the further proceedings conducted to consider the railroads' petition for authority to make additional increases which would bring the whole Ex Parte 175 advance up to the 15 per cent originally sought (with a few exceptions) in that case. Previous decisions in the case had authorized increases averaging about 7.5 per cent in the East, 6.8 per cent in the Pocahontas region, and 5.8 per cent in the South and West. (*Railway Age* August 20, 1951, page 55.)

The general 15 per cent increase (with exceptions) now authorized will supplant these earlier raises. Like these earlier advances, the new increases are to be "surcharges," and the authority to maintain them will expire February 28, 1954—one year later than the expiration date of the adjustment which they supplant.

The new increases will be applied uniformly throughout the country. Thus the raises in "present" rates will be less in the Eastern district and Pocahontas region than in the South and West. The adjustment may be made effective on 15 days' notice, except as to grain and grain products where 30-day tariffs will be required. The railroads plan to make the effective dates May 2 and May 17, respectively.

As the proposed adjustment was set out in the railroad petition, the general percentage increases would have been subject to "hold-downs" (which are maximum limits on cents-per-100-lb. increases) on fresh fruits and vegetables, sugar, and lumber and articles taking lumber rates. Also excepted would be rates on coal where it was proposed to apply specific cents-per-ton increases.

The commission's report limited to 12 per cent the increases on iron ore, grain and grain products, and sand, gravel and stone. As to coal, it authorized an increase of 12 per cent, subject to a maximum of 40 cents per net ton; while 6 per cent, maximum 20 cents per net ton, was approved for lignite. Charges for handling iron ore at upper and lower Great Lakes ports will take the 15 per cent increase.

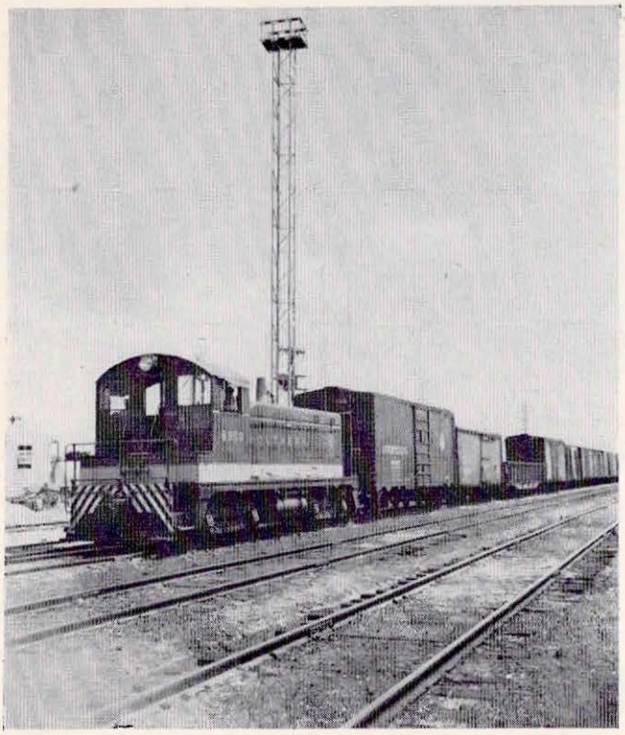
"Hold-downs" which the commission imposed to limit application of the 15 per cent increase on other commodities were as follows: Maximum increase of 12 cents per 100 lb. applicable on fresh fruits and vegetables, melons, and edible nuts, lumber and articles taking lumber rates, canned or preserved food products, and copper, lead and zinc articles; maximum increase of 14

Increase Will Yield $635 Million Annually, I.C.C. Bureau Estimates

The annual-basis yield of the additional Ex Parte 175 rate increases authorized by the I.C.C. in its April 11 decision will be about $635 million, the commission's Bureau of Transport Economics and Statistics estimated in the April issue of its "Monthly Comment."

This is based on a traffic estimate of about 641 billion ton-miles, made by the railroads in January, and it would include $618 million in additional freight revenue and $17 million from the increased charges on accessorial and other services.

The additional increases will raise freight rates "currently in effect" by about 6.8 per cent, the bureau also calculated.



Relatively, southern and western railroads will receive larger increases than eastern and Pocahontas carriers.

cents per 100 lb. applicable on building woodwork and millwork; maximum increase of 10 cents per 100 lb. applicable on sugar; maximum increase of 60 cents per ton applicable on phosphate rock and salt; maximum increase of $1 per ton applicable on potash.

No increase was authorized in charges for protective services to perishable freight, for loading and unloading livestock, and for unloading fresh fruits and vegetables at New York. Freight forwarders were authorized to make increases in their rates which will correspond to the raises approved for the railroads.

Discussion in the report indicated that an important reason for granting the increase was the commission's concern about deterioration of the railroads' financial situation. "The petitioners' own showing," the report said, "indicates that the railroads could 'get by' for a time on the present authorized basis of rates. . . . Nevertheless, the upward trend of expenses, prices, and an unsettled wage situation, combined with uncertainties as to the future trend of traffic, present potential dangers to the whole system of transport unless a greater degree of assurance is given as to the adequacy of future earnings."

The commission's decision was unanimous, except for the partial dissent of Commissioner Splawn. Other separate, though "concurring," expressions came from Acting Chairman Aitchison, with whom Commissioner Mahaffie agreed, and Commissioner Mitchell. Notations said that Commissioner Patterson concurred "in the result" of the majority decision, and that Chairman Rogers, "necessarily absent," had indicated that "if present he would vote for the majority report and orders."

The Aitchison-Mahaffie view was that the 15 per cent increase should have been confined to the Eastern district, and that increases elsewhere should not exceed 12 or 13 per cent. Commissioner Mitchell thought that the unfavorable credit position of the railroads was not pointed up sharply in the majority report.

"The whole situation, so far as the credit position of railroads is concerned," he said, "can be summed up in one single sentence. They have not had sufficient earnings to justify investment in their stocks."

Commissioner Splawn found in the record evidence to the effect that the railroads' financial and credit position had "improved in marked respects" during the postwar period. He concluded that the carriers had not established their need for the approved increases, "which by their nature and their incidence will have serious inflationary effects, altogether disproportionate to the small benefits which the carriers will derive from them."

The decision was dated April 11 and made public April 14. The majority report was a document of 103 double-spaced, mimeographed sheets. It got under way with a brief outline of the case and a discussion of "significant" economic changes since the prior report. Such changes included the commission order under which railroad reports to the commission will no longer reflect accelerated amortization of equipment and facilities acquired to handle defense traffic loads; and the "escalator-clause" wage increase of four cents per hour which became effective January 1.

As to the railroads' financial situation, the commission had figures to support a statement to the effect that the carriers' position, as measured by net railway operating income and net income, "did not worsen seriously" in 1951 as compared with 1950. When it went on, however, to consider the "relation of profit to revenue," the commission was prompted to make the statement, noted above, about the need for "a greater degree of assurance" as to the adequacy of prospective future earnings.

Traffic Drop Could Threaten Solvency

"The relation of gross revenue to net railway operating income is important," it continued. These ratios of profit from the average dollar transaction have been on a generally decreasing basis . . . and are now at a level where with a continuation of present rates any marked unanticipated drop in traffic could seriously threaten the solvency of important carriers, unless counterbalanced by important revenue increases. Should there be a marked decrease in traffic, especially if, as might well be, it were accompanied by such an increase in the cost of living as to bring about an automatic increase in wage scales, a very different financial situation might result, which would be aggravated by the continuing necessity for currently meeting equipment obligations as they mature."

Figures in the report showed that the 1952 ratio of net railway operating income to gross would be only about 8.7 per cent on the basis of present rates. This would compare with a 1926-1930 average of 13.5 per cent, 1936-1940 and 1941-1945 averages of 14.4 per cent, and 1950 and 1951 ratios of 11 per cent and 9.1 per cent, respectively.

"The 1951 and 1952 figures," the commission said, "show a vulnerable position of the roads, which might become disastrous with either (1) severe recessions in traffic, (2) continued or unexpected increases in wage or material cost, or (3) further increase in taxes to be born out of the avails of the service performed."

In discussing rate of return and valuation, the commission said, as to the latter, that "inflationary forces need not be given controlling consideration in estimating value of public service property for rate-making purposes." At the same time, it produced figures showing that 1951 rates of return on its own valuation ($22.7 billion) averaged above 6 per cent only in the Poca-

hontas region, where it was 7.4 per cent. The range in other territories was from the New England region's 1.8 per cent to the Central Western region's 5.2 per cent. The national average was 4.2 per cent.

Return Generally "Substandard"

As to the rate of return for individual roads, the commission noted that such figures show that "there is now a much less wide band of varying rates . . . than has formerly been exhibited." The individual-road figures for 32 Class I roads having values exceeding $190 million, as computed by the commission, were given. The highest 1951 rate of return shown was the New York, Chicago & St. Louis' 8.8 per cent; and next, in turn, came the Chesapeake & Ohio's 7.9 per cent and the Norfolk & Western's 7 per cent. Only three other roads on the list—the Seaboard Air Line, Atchison, Topeka & Santa Fe, and Denver & Rio Grande Western—had returns as high as 6 per cent. The commission's appraisal of that showing included this comment:

"Judged by any standard shown of record, the rates of return earned or prospectively to be earned . . . are substandard. Some important roads are earning little enough that a continuance of the earnings situation will imperil their solvency, while some are in comfortable condition. Neither the strongest nor the weakest lines can control the rate adjustment; and as has been shown, the great body of the rail carriers are in the middle class with aggregate earnings that for the immediate future must be considered as substandard, and inadequate."

Coming to its consideration of the influence of federal income taxes, the commission referred to railroad estimates indicating that to raise the net railway operating income by $281 million, as contemplated by the petition, the net before income taxes would have to increase by $587 million, i.e., the additional income-tax bite would take $306 million. In that connection, however, the commission rejected contentions that it should split the railroads' income tax payments into "normal" and "national defense" payments.

The former, according to proponents of the split, would be payments made under the 38 per cent rate in effect prior to the onset of the current defense program. Payments made as a result of tax-rate increases since that time would be "national-defense" payments, and they would not be chargeable to operating expenses.

In rejecting the proposal, the commission cited court decisions holding that "income taxes are a proper charge to operations and are deductable as such in arriving at a fair return."

The report's discussion of the railroads' credit position referred to emphasis laid by the carriers on the relatively poor rating of railroad bonds. As to that, however, it was the commission's view that "no adequate appraisal of rail credit from the standpoint of borrowing money can be made without consideration of the yields on equipments as well as on long-term rail mortgage and other bonds." While it conceded that the absence of stock issues in recent years has reflected a policy which railroad management, in many cases, was "forced" to follow, the commission said there were also cases which reflected "managerial discretion" rather than poor credit.

At the same time the commission reported its concern about the "deterioration" of the railroads' current position. Declines in the ratios of current assets to current liabilities and of cash and temporary cash investments to current liabilities, "we regard . . . as most serious," the report said.

In passing upon pleadings of various parties to the case, the commission rejected a request by intervening motor carriers who sought to have the increases frozen so the railroads could not make subsequent reductions to meet competition. Noting that any such reduction would be subject to investigation and suspension, the commission went on to say: "We do not see the necessity for conditioning our . . . authorizations . . . in such manner as to amount to a continuing order to maintain the authorized rates as minimum rates. The record would not permit it, if we considered it sound policy."

BENCH MARKS AND YARDSTICKS—7

The vice-president and general manager of a large railroad—addressing himself to the remarks of a regional vice-president in this space in our March 17 issue—asserts that "railroads are organized in such a manner that inefficiency and ineptness are quickly discovered. The trouble is not the absence of measuring techniques, but the reluctance to take the necessary corrective action when a deficiency is found. Mediocrity can hide for a lifetime on railroad payrolls. Standards are not needed to discover this fact.

"There is little likelihood of successfully relating the activities of an individual to such standards as a pint, foot or ton, nor would we want to do so. It would be an error of commission to create a framework of performance, which of necessity would be somewhat below the best, and thereby inadvertently encourage average grade.

"Much greater results would come from an all-out effort to create a more favorable atmosphere for the fullest possible development of each individual. This is predicated on the assumption that those incapable of progress will be removed from positions of responsibility; that, in the promotion of employees, known testing methods are used; and that employment practices prevent the continuance on the payrolls of people who work solely for payday."

While agreeing with our friend's views in every particular, it seems to us that his assumptions are somewhat optimistic—on many railroads the standards as to personnel are not as definite or as high as those he has in mind. Some railroads, we understand, do not even require periodic physical examinations of operating department employees.

There is no adequate "scientific" or quantitative substitute for an instinctive talent scout—who can pick out the lights hidden under the bushels without knowing, himself, exactly how he does it. But there are "scientific" or quantitative aids for managers who have good sense, but lack the instincts of genius. What are some of these measuring sticks—which aren't perfect and won't take the place of inherent genius, but which might improve the quality of performance where capacity for instinctive judgment is lacking?

For instance, we know of one chief railway executive who concerns himself, in appraising candidates for advancement up the official ladder, with such questions as these, in addition to their professional qualifications: Is the man completely honest (more so, that is, than mere refraining from overt theft or lying)? Does he ever take one drink too many (regardless of how far from the railroad he may be)? If married, is he to all appearances a loyal "family man"? If he has religious connections, does he make some effort to support these activities?

SUPPLY TRADE

(Continued from page 18)

Robert Looker, of the sales department of the **Huck Manufacturing Company,** Detroit, has been appointed sales manager, while **Donald Stamy,** formerly an engineer with the **Chrysler Corporation,** has been appointed assistant sales manager.

Vernon L. Johnson, associated until recently with the Studebaker Corporation, has been appointed regional sales manager of the **Clark Equipment Company's** northeastern region, with headquarters at 165 Broadway, New York City.

As reported in *Railway Age* April 7, page 135, **Bard Browne,** vice-president of **Combustion Engineering-Superheater, Inc.,** has retired. Mr. Browne has been a vice-president of the company since the merger of the Combustion and Superheater organizations several years ago, prior to which he was a vice-president of the Superheater Company and was in charge of sales and service for that company and also for the American Throttle Company.

He continued to exercise those responsibilities as a vice-president of Combustion Engineering-Superheater, Inc. Mr. Browne, who received his technical education at Drexel Institute and the University of Pennsylvania, entered railroad service in Kansas City, Mo. Prior to entering the employ of the Superheater Company in 1915, he was associated with railroads and locomotive builders in both domestic and foreign service. Mr. Browne plans to remain active in the railway supply business.

The **Reynolds Metals Company** has appointed the **Vinson Supply Company,** Dallas, Tex., and **Very's Brothers, Inc.,** Columbus, Ohio, as distributors handling Reynolds' general line of aluminum mill products.

The **Racine Tool & Machine Co.** has changed its name to **Racine Hydraulics & Machinery, Inc.,** and has moved into a newly modernized plant at 2000 Albert street, Racine, Wis. The new quarters add approximately 50 per cent to the firm's previous manufacturing floor space.

OBITUARY

Wallace B. Phillips, 66, president of the Pyrene Manufacturing Company, Newark, N. J., died on April 14 at Roosevelt Hospital, New York.

Fred Elliott Guy, who retired as general traffic manager of the Universal Atlas Cement Company in December 1945, died of a heart attack at the Pittsburgh Traffic Club on April 14. Mr. Guy is credited with having been a pioneer in promotion of the adoption of covered hopper cars for cement transportation, and with having been active in bringing about the present widespread use of that type of car.

ORGANIZATIONS

Harry L. Schear, traffic manager of the Globe-Wernicke Company, Cincinnati, has been elected chairman of the executive committe of the **Steel Office Furniture Traffic Association.** Other officers elected were: Secretary, R. W. McEvoy, traffic manager, Art Metal Construction Company, Jamestown, N. Y.; and treasurer, Oscar Meyer, traffic manager, Yawman-Erbe Manufacturing Company, Rochester, N.Y.

List of meetings and conventions begins on page 86.

CAR SERVICE

Chairman A. H. Gass of the Car Service Division, A.A.R., has issued Special Car Order No. 84, effective April 20, to expedite return home of ventilated box cars owned by the Atlantic Coast Line, the Seaboard Air Line, and the Charleston & Western Carolina. The reason for the order, which will remain in effect until "further notice." was "impending heavy movement of perishableless in Southeastern territory, principally watermelons."

I.C.C. Service Order No. 866, which prescribes operating regulations for movement of freight cars, has been modified by Amendment No. 3. The amendment, effective April 16, provides that Saturdays, Sundays and holidays may be excluded in computing periods of time which the order allows for the placement and pulling of freight cars at industry sidings.

I.C.C. Service Order No. 856, which provides for inclusion of Saturdays in computing demurrage, has been suspended until May 31. The suspension order, effective April 16, was No. 856-A.

FINANCIAL

Canadian National.—*Recapitalization.*—A Canadian government proposal to assess corporation taxes on the Canadian National may postpone the working out of the company's capital revision program, which had been scheduled for consideration at the present session of Parliament. Under the proposed tax plan, the C.N., along with several other so-called Crown companies, would be charged with the general corporation tax on its earnings. While this tax varies, it would amount, on a company as large as the C. N., to 50 per cent, which is what is paid by the Canadian Pacific. At present the tax would probably not impose any actual financial burden on the C.N., because the road is currently operating at a deficit after interest, despite actual operating earnings. It is reported, however, that legal imposition of the tax would force postponement of recapitalization along the lines recommended a year ago by the Royal Commission on Transportation (*Railway Age*, March 26, 1951, page 42). Those recommendations would have revised the C.N.'s capital structure in such a way that, had they been in effect the road would have had a surplus of about $8 million in 1951.

Colorado & Southern.—*To Simplify Corporate Structure.*—This road and its subsidiary the Fort Worth & Denver have filed a joint application with the I.C.C. seeking approval of a plan for simplifying the corporate and capital structure of Colorado & Southern Lines. The Ft.W. & D. would acquire control of seven other subsidiary lines and those seven companies would ultimately be dissolved. The C.&S. at present holds the stock of those seven roads, which aggregate approximately 550 miles. The Ft.W. & D. would pay the C.&S. $16,472,117, in cash and bonds, for this stock.

As part of this same plan, the roads also asked the I.C.C. for authority to issue and sell $17,000,000 of Ft.W. & D. first mortgage bonds. These bonds would be guaranteed by the C.&S. Most of the proceeds from sale of these bonds would be used by the Ft.W. & D. to acquire the above stock. The remainder would be used to pay off a note held by the Reconstruction Finance Corporation. The C.&S. in turn would use the cash it acquires from sale of the stock to pay off its own

outstanding general mortgage and refunding and extension mortgage bonds.

Result of this simplification program, the roads told the commission, would be to reduce C.&S. Lines to only two companies, and to reduce long-term debt to the $17,000,000 in new bonds.

Illinois Central.—*Competitive Bidding Exemptions; Changes in Capital Structure.*—The I.C.C. has authorized this road to negotiate for private sale of $25,000,000 of consolidated mortgage bonds, series D. The road asked for this exemption from competitive bidding because of the "uncertain and weak" railroad bond market. It expects to make a substantial net cash saving through private sale of the issue (*Railway Age*, April 7, page 139). The road has not yet filed an application for authority actually to issue the new bonds.

To facilitate possible future financing by means of convertible debentures, the company will ask its stockholders, at the annual meeting to be held in Chicago on May 21, to approve the following changes in capital structure: (1) Change each share of authorized common stock of $100 par value into a share without par value; (2) increase from 1,390,511 shares to 3,500,000 shares the total number of authorized new no par shares; and (3) adjust conversion rights of preferred stock to reflect the change in par value of common stock.

The proxy statement proposing these changes said in part: "The reduction in funded debt . . . in the last 10 years has substantially reduced the percentage of total capitalization represented by debt. . . It is important that the percentage be further reduced by retiring funded debt through issue of additional stock or debentures, or by raising additional money which may be needed for capital expenditures through issue of stock or such convertible debentures."

Lehigh Valley. — *Stock Option Plan.*—This road has asked the I.C.C. for authority to issue 36,000 shares of capital stock in connection with its proposed stock option plan for officers and key employees. The proposed plan provides that key management personnel shall be given a five-year option to purchase a specified number of shares. The road's executive and finance committee will select the officers to whom options will be granted. Price to be paid for these shares will be determined by prices on the stock exchange the date the options are granted. Proceeds from the sale of this stock will be devoted to reduction of L.V. bonded indebtedness. These 36,000 shares are a part of the road's "authorized but unissued" stock. (*Railway Age*, April 14, page 62).

Toledo, Peoria & Western. — *Stock Split.*—The I.C.C. will be asked to approve a 1,600-to-1 split in this road's capital stock. The proposal, approved by stockholders and directors on April 15, is to issue 80,000 common

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shares of $50 par value each in place of the present 50 capital shares of $100 par value each.

New Securities

Application has been filed with the I.C.C. by:

CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA.—To assume liability for $990,000 of equipment trust certificates to finance in part eight diesel-electric locomotive units costing an estimated $1,243,942.

	Description and Builder	Estimated Unit Cost
3	1,500-hp. road-switchers (Electro-Motive Division, General Motors Corporation)	$149,118
2	1,500-hp. road-switchers (Electro-Motive)	154,282
1	1,600-hp. road-switcher (American Locomotive-General Electric Companies)	153,601
1	1,600-hp. road-switcher (Alco-G.E.)	161,792
1	1,600-hp. road-switcher (Alco-G.E.)	168,530

The certificates, to be dated June 1, would mature in 15 annual installments of $66,000 each, beginning June 1, 1953. They would be sold by competitive bidding, with the interest rate to be set by such bids.

DENVER & RIO GRANDE WESTERN.—To assume liability for $4,440,000 of series R equipment trust certificates, to finance in part 17 diesel-electric locomotives costing an estimated $5,946,770:

	Description and Builder	Estimated Unit Cost
5	6,000-hp. freight locomotives, each consisting of two 1,500-hp. "A" lead units and two 1,500-hp. "B" units. (Electro-Motive Division, General Motors Corporation)	$663,022
2	4,500-hp. freight locomotives, each consisting of two 1,500-hp. "A" lead units and one 1,500-hp. "B" unit. (Electro-Motive)	504,165
10	1,500-hp. road-switchers (Electro-Motive)	162,133

The certificates, to be dated June 1, would mature in 30 semiannual installments of $148,000 each, beginning December 1, 1952. They would be sold by competitive bidding, with the interest rate to be set by such bids.

MISSOURI PACIFIC.—To assume liability for $2,700,000 of series SS equipment trust certificates, to finance in part 14 diesel-electric locomotive units and three planetarium cars, costing an estimated $3,387,056.

	Description and Builder	Estimated Unit Cost
8	1,500-hp. road-switchers (Electro-Motive Division, General Motors Corporation)	$165,273
6	2,250-hp. passenger units (American Locomotive-General Electric Companies)	234,176
3	planetarium cars (Pullman-Standard Car Manufacturing Company)	216,551

The certificates, to be dated May 1, would mature in 15 annual installments of $180,000 each, beginning May 1, 1953. They would be sold by competitive bidding, with the interest rate to be set by such bids.

NEW YORK CENTRAL.—To assume liability for $3,220,000 of equipment trust certificates, to finance in part 42 diesel-electric locomotive units and seven Budd rail diesel cars. Estimated cost of this equipment (listed below) is $7,078,940.

	Description and Builder	Estimated Unit Cost
18	1,200-hp. switchers (Baldwin-Lima-Hamilton Corporation)	$102,900
16	1,600-hp. "A" freight units (American Locomotive-General Electric Companies)	176,000
8	1,600-hp. "B" freight units (Alco-G.E.)	159,000
6	RDC-1 passenger coaches (Budd Company)	162,940
1	RDC-3 passenger-baggage-mail car (Budd)	161,100

The certificates, ot be dated May 15, would mature in 15 annual installments of $348,000 each, beginning May 15, 1953. They would be sold by competitive bidding, with the interest rate to be set by such bids.

Dividends Declared

GEORGIA R. R. & BANKING.—$1.75, quarterly, payable April 15 to holders of record April 1.

LITTLE MIAMI.—Original capital, $1.10, payable September 10 and December 10, to holders of record August 20 and November 19; $1, payable March 10, 1953, to holders of record February 19 1953. Special guaranteed, 50¢, quarterly, payable June 10, September 10, and December 10, 1952, and March 10, 1953, to holders of record May 22, August 20, and November 19, 1952, and February 19, 1953.

RUTLAND & WHITEHALL.—$1, quarterly, payable May 15, to holders of record May 1.

UNITED NEW JERSEY R.R. & CANAL.—$2.50, quarterly, payable April 10 to holders of record March 20.

Security Price Averages

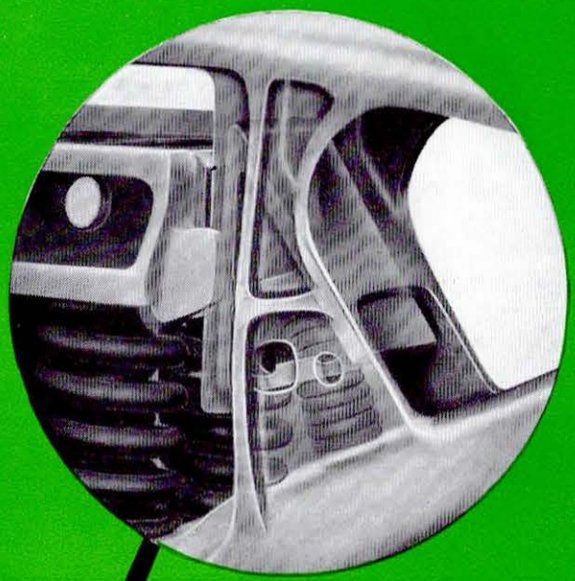
	Apr. 15	Prev. Week	Last Year
Average price of 20 representative railway stocks	58.12	59.62	56.68
Average price of 20 representative railway bonds	93.08	93.29	95.53

ANNUAL REPORTS

Railroad		Operating Revenues	Operating Expenses	Fixed Charges	Net Income	Current Assets*	Current Liabilities*	Long Term Debt*
Ann Arbor	1951	$9,207,225	$6,905,635	$ 258,220	$ 789,896	$3,271,201	$1,575,487	$7,046,997
	1950	9,400,460	6,570,304	229,828	1,249,853	5,039,793	1,685,809	7,436,949
Boston & Maine	1951	88,419,714	71,807,911	3,055,051	56,179	30,497,294	17,388,002	94,144,757
	1950	86,580,762	66,816,462	3,136,288	2,413,749	33,074,941	18,918,203	97,118,359
Canadian National	1951	624,834,120	580,150,221	48,176,558	15,031,996d	174,614,120	100,824,377	615,197,035
	1950	553,831,581	473,997,079	47,421,983	3,261,235d	156,618,867	96,236,916	659,030,241
Canadian Pacific	1951	428,911,639	402,098,807	12,848,997	43,307,470	184,914,327	81,055,166	99,045,000
	1950	378,576,688	340,556,331	13,389,610	47,867,011	161,803,381	72,246,992	85,709,000
Chicago, Indianapolis & Louisville	1951	21,517,295	16,792,545	264,054	1,215,990**	7,867,415	4,092,099	21,769,796
	1950	19,752,299	14,743,653	255,085	1,300,141	9,358,802	5,205,905	21,717,796
Chicago, Milwaukee, St. Paul & Pacific	1951	265,400,542	219,455,141	4,309,683	10,068,990	101,651,290	56,233,290	229,456,056
	1950	255,421,649	199,650,956	4,218,431	15,171,193	110,727,541	61,016,457	222,689,413
Delaware & Hudson	1951	59,083,880	45,965,215	1,874,942	3,245,761	23,540,530	8,780,754	91,353,190
	1950	54,834,836	42,135,606	1,855,911	3,408,874	19,911,788	7,961,169	90,165,824
Denver & Rio Grande Western	1951	77,790,123	52,341,395	2,193,129	8,334,234	47,297,002	20,859,084	87,084,150
	1950	66,123,375	47,148,643	2,356,376	6,356,790	42,651,706	17,409,172	93,048,570
Detroit & Mackinac	1951	2,585,142	1,558,169	69,863	312,830	1,048,672	765,506	1,960,614
	1950	2,232,360	1,157,333	81,867	500,962	946,381	669,154	2,390,727
Duluth, South Shore & Atlantic	1951	7,991,111	6,621,027	56,934	381,940	3,653,479	1,201,029	6,966,716
	1950	7,093,373	5,533,509	61,798	688,142	3,643,836	1,124,027	7,570,361
Georgia & Florida	1951	3,374,106	2,731,461	939,158	734,887d	486,939	2,306,397	10,014,640
	1950	2,994,608	2,639,656	880,467	885,522d	431,182	2,202,784	10,110,640
Gulf, Mobile & Ohio	1951	88,684,103	63,677,037	1,772,379	6,638,579	41,418,430	28,989,034	72,282,680
	1950	78,428,088	55,152,810	1,808,417	8,022,824	35,872,687	26,364,307	78,424,021
Illinois Central	1951	295,091,790	223,346,133	9,533,761	18,398,053	96,800,934	63,827,848	205,593,220
	1950	275,968,155	200,311,230	10,118,544	29,412,202	119,535,039	71,552,123	216,267,615
Indianapolis Union	1951	850,984	3,830,089	200,239	301,913	1,602,356	991,703	5,913,177
	1950	720,436	3,448,693	204,487	356,523	1,778,814	1,003,266	6,240,962
International of Central America	1951	13,126,431	12,053,217	307,658	321,276	6,134,485	1,139,989	6,362,038
	1950	13,466,226	11,193,877	323,686	1,188,272	5,456,764	1,348,925	6,463,025
Jersey Central Lines	1951	64,733,680	53,475,910	4,248,379	944,360	20,211,584	10,236,493	68,618,611
	1950	60,156,317	47,620,644	4,244,703	2,779,692	20,792,960	10,848,770	67,348,257
Kansas City Southern	1951	44,061,236	25,895,608	2,359,021	5,216,136	20,133,078	13,452,637	62,219,196
	1950	39,354,451	22,767,857	2,390,959	6,148,380	18,057,782	11,552,865	64,454,951
Lake Superior & Ishpeming	1951	4,444,114	3,043,633	none	743,295	4,069,287	1,339,185	none
	1950	3,746,767	2,495,169	none	776,422	4,180,162	1,104,545	none
Lehigh & New England	1951	8,922,820	5,348,853	192,875	1,665,256	4,131,825	3,247,273	8,735,228
	1950	8,473,101	4,768,631	203,903	2,060,775	3,925,306	3,232,028	7,403,816
Louisiana & Arkansas	1951	24,316,374	16,020,756	729,775	2,583,815	12,593,777	7,095,789	27,251,167
	1950	21,450,683	12,741,549	664,983	3,114,933	14,510,841	7,568,019	18,214,653
Maine Central	1951	26,281,239	19,975,998	1,270,637	1,443,785	8,444,092	5,631,290	26,821,222
	1950	23,983,122	18,583,649	1,230,760	1,266,759	7,442,047	5,221,846	26,943,410
Mississippi Central	1951	2,655,585	1,851,592	45,233	245,523	988,278	466,731	1,173,950
	1950	2,430,663	1,719,592	47,327	225,340	838,440	448,629	1,234,950
Missouri-Kansas-Texas	1951	78,828,267	59,156,466	2,714,985	4,173,960	26,366,518	15,971,922	90,566,071
	1950	77,582,227	55,222,888	2,385,531	6,347,668	26,764,584	16,669,238	78,961,749
New York Central	1951	903,983,908	773,110,314	43,595,418	21,011,506	282,198,621	164,619,932	1,032,094,048
	1950	843,925,677	706,135,196	43,018,923	19,614,125	290,603,691	167,964,726	1,026,516,880
New York, Chicago & St. Louis	1951	160,705,508	110,305,442	5,001,464	18,482,772	50,498,810	37,968,711	121,497,270
	1950	146,923,939	94,255,256	4,865,523	21,019,542	43,974,582	40,828,544	119,548,790

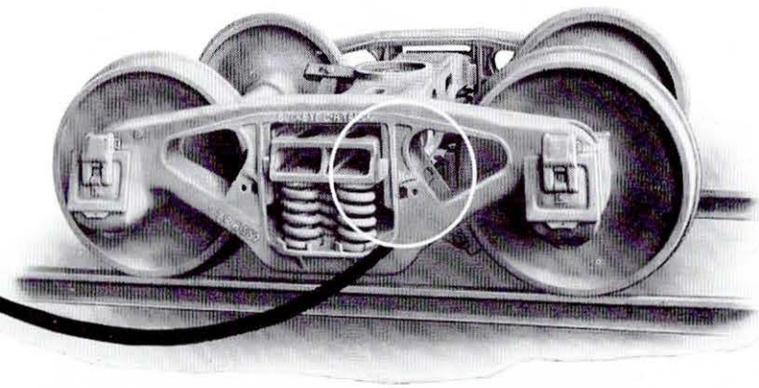
* On December 31.
d Deficit.
** Includes net refund of about $325,000, applicable to prior years' federal income taxes.

In the Buckeye C-R Truck



FULL WIDTH BEARING IS EASY ON THE SEAT

The full width bearing of the friction wedge against the side frame and the bolster results in low unit pressures on these seats thereby reducing wear and increasing service life.

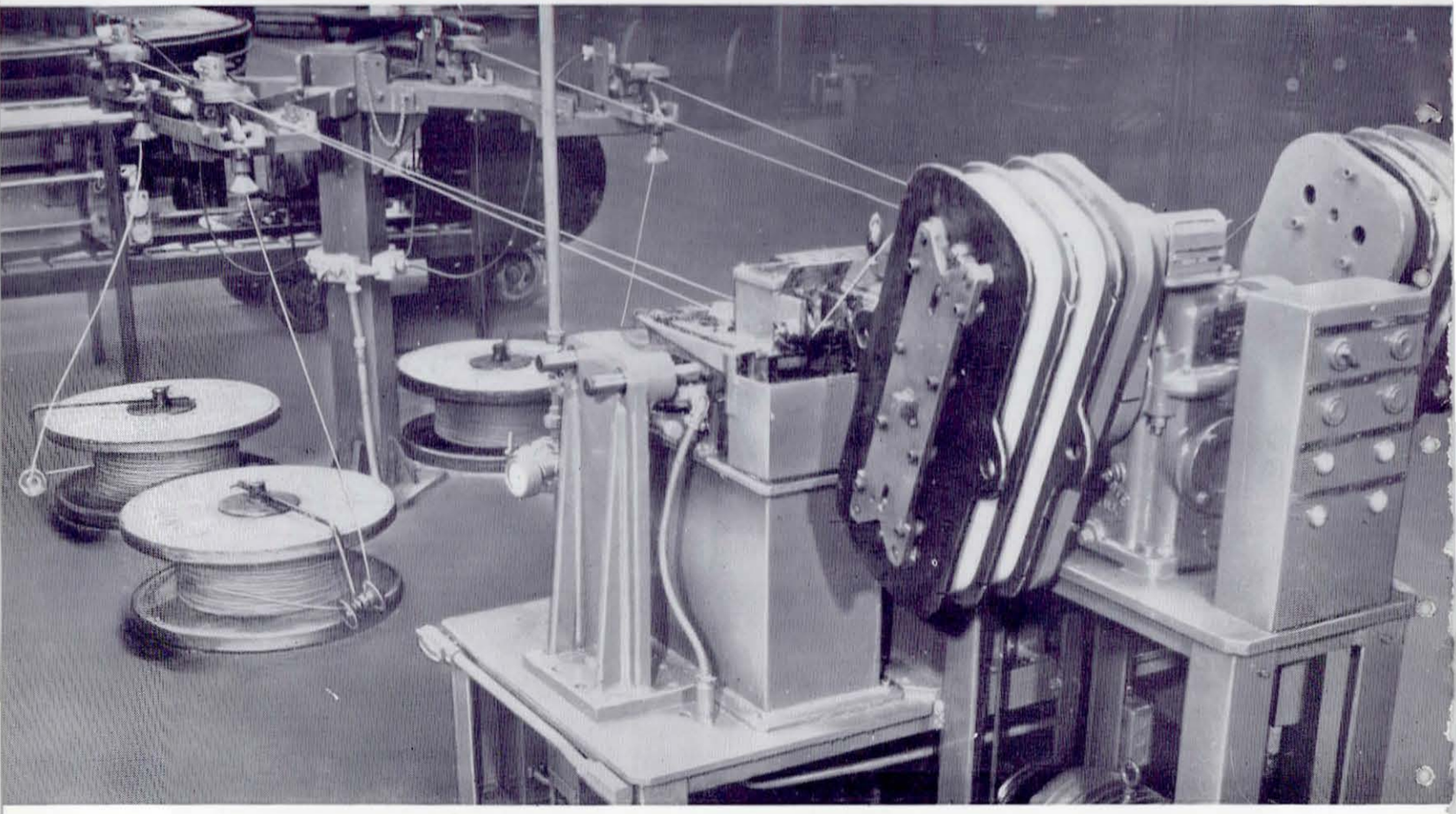


B

THE BUCKEYE STEEL CASTINGS COMPANY

New York, N. Y. Columbus, Ohio Chicago, Ill.

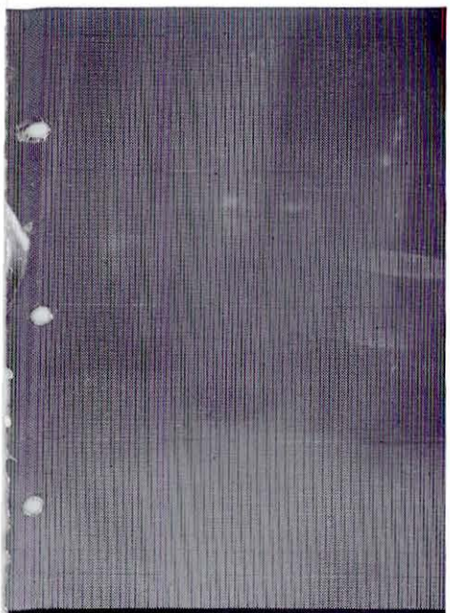
There were no



"Commutator Cross-Connectors are produced accurately by this automatic forming fixture with a saving of 72% in time, as compared to the old hand method. Taped copper wire, fed into this unit, emerges as precision-formed 'gull-wing' cross-connectors for traction motor armatures."

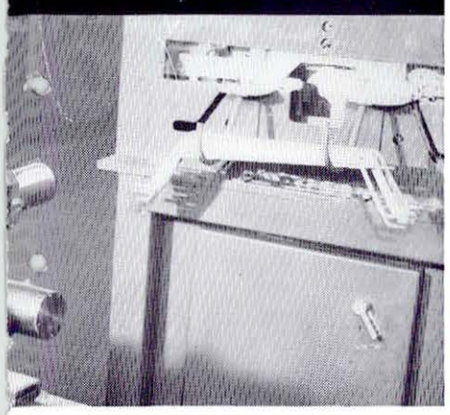
You're Always better off with

machines like these



Coil Winding and Impregnating machine, specially developed by Electro-Motive engineers, mechanically turns out four uniformly accurate coils at the same time. Varnish is automatically applied to the wire just before winding, eliminating the costly and uncertain vacuum impregnation method. This new process saves 83% in time, in addition to the gain in quality.

Taping Generator Armature Straps used to be a tedious hand operation until Electro-Motive developed and built this automatic strap taping machine. Now the job is done seven times faster and with much greater accuracy.



until Electro-Motive built them!

HERE you see some results of Electro-Motive's never-ending search for better and more efficient ways of mass-producing Diesel locomotives of highest quality at lowest cost.

Electro-Motive has a staff of process engineers constantly seeking out improved ways to do a job. And when it calls for a machine or tool of special design, these men roll up their sleeves and go to work.

They actually develop and build many of the tools we use—unique laborsaving devices like the automatic taping machine, coil winding machine, and Cross-connector forming fixture pictured here. In many cases, these Electro-Motive developed machines and facilities have cut the time for doing jobs in half. In every case, quality of the product is more rigidly, more accurately controlled.

From rail to roof—coupler to coupler—these advanced methods of standardized mass production help to explain the extra values that enable General Motors Diesel locomotives to outwork and outlive all others.

10 PLUS FEATURES IN ELECTRO-MOTIVE'S LIFELONG SERVICE PROGRAM

1. **UNMATCHED EXPERIENCE** gained in designing, engineering and building more than 10,000 Diesel locomotive units.

2. **SUPERIOR MANUFACTURING FACILITIES** for mass-production of highest-quality locomotives at lowest cost.

3. **PROMPT PARTS SUPPLY** through strategically located factory branches and parts depots at eight key railroad centers.

4. **SKILLED TROUBLE-SHOOTING** and maintenance advisory service by a nationwide staff of 150 service engineers and parts specialists.

5. **FACTORY REBUILDING** of major assemblies with same techniques and tooling used in new manufacture.

6. **UNIT EXCHANGE SERVICE**—Prompt delivery of fully rebuilt assemblies in exchange for units needing rebuilding.

7. **PROPER SCHOOLING** of operating and maintenance personnel from the first day General Motors equipment goes on the line.

8. **SPECIAL ENGINEERING** of new and improved parts to make them fit General Motors units of any age.

9. **ONE-YEAR 100,000-MILE GUARANTEE** on Electro-Motive parts and rebuild effective upon installation, *not* the date of shipment.

10. **FACILITIES PLANNING SERVICE**—Expert assistance in helping railroads plan Diesel servicing and parts warehousing facilities.

GENERAL MOTORS LOCOMOTIVES

ELECTRO-MOTIVE DIVISION
GENERAL MOTORS

La Grange, Illinois · Home of the Diesel Locomotive

In Canada: GENERAL MOTORS DIESEL, LTD., London, Ontario

Teletype helps keep them highballing

FOR MANY YEARS, this country's railroads have depended on fast, accurate printed communications—by Teletype—to help keep passenger and freight traffic moving fast and on schedule. Easy to operate and economical, Teletype can be used to handle practically every variety of railroad message traffic, records and reports.

"Private Management of RRs Suspended"—Metzman

"When I . . . tell you that private management, in effect, has been suspended in our industry, I realize that I am making a serious charge. But I intend to place the evidence before you and leave the verdict in your hands," Gustav Metzman, president of the New York Central, said in an address prepared for the annual meeting of the Chicago Executives Club.

To demonstrate how far "erosion" of private management in the industry has been carried, Mr. Metzman listed these management functions "which his listeners would consider essential marks of management responsibility in a free enterprise economy":

- "Determination of pricing policies."
- "Flexibility to meet competition."
- "Ability to decide production policies, i.e., what you will produce and what you won't produce — in the light of market conditions."
- "The opportunity to make a reasonable profit."

Applying these functions to the railroad industry, Mr. Metzman said:

"Any rate we try to put into effect can be upset by a single protest. . . . Regulation of railroad rates today is exactly the regulation one might prescribe for an industry enjoying a sheer and absolute monopoly. Entirely ignored is the fact that railroads, far from being a monopoly, are subject to aggressive competition from several forms of transportation.

"While monopoly-type regulation is reserved for railroads, competing forms of transportation are treated much more liberally.

"Many big over-the-road truck lines operate as contract carriers. They don't have to charge the same rates to every shipper; they can bargain in secret with each shipper — and no shipper knows whether he's getting a better or worse deal than the next. Yet heaven help the common carrier railroads if they ever make a mistake and charge someone a penny less or more than the posted tariff. The contract trucker knows what we charge, but we don't even know what we are competing with when it comes to price.

"In . . . production policies, we find our hands tied more often than not when we want to stop producing a money-losing service. Even though the public has long since abandoned a passenger or freight service, some state regulatory agencies interminably drag on proceedings by which we seek permission to discontinue it. All too often, they refuse permission altogether. . . . Even such inadequate [rate] increases as have been granted have come only after tortuous and costly delays. The dynamic nature of business today requires quick adjustments to changing conditions. But . . . except for small interim increases, four rate petitions which the railroads have placed before the Interstate Commerce Commission in recent years have taken, respectively, 260 days, 347 days, 331 days and 223 days for final action.

"The result of these long delays — and the inadequacy of the rate relief ultimately granted—has been an artificially depressed state of railroad earnings throughout the postwar era.

"I do not mean to ascribe the entire responsibility for these delays to the I.C.C. One contributing factor is the obstructionist tactics invariably practiced in rate proceedings by certain parties . . . to whom delay . . . represents victory. They don't deny that railroad costs have gone up; they don't deny that the price of everything else has gone up, but they insist that railroad rates shouldn't go up. These parties, it should be noted, have included in recent years a number of government agencies."

"Short-sighted Economy"

Mr. Metzman added that another factor contributing to the "tragic slowness of action on rate requests" is the "steady sabotage of the I.C.C.'s efficiency by short-sighted reductions in funds appropriated for that agency by Congress." He said that the amount of additional money required by the commission would be only one ten-thousandth of the amount appropriated by Congress for purposes wholly outside the scope of defense. "Under the illusion of economy, the withholding of this relatively small sum is hampering the commission's work to the detriment both of the industries which the commission regulates and of the general public."

He asked for his listeners' support, in the normal contacts of everyday business, "for the restoration to the railroads of some degree of the freedom that you have — the freedom to run the railroads as a competitive business, subject to the inexorable laws of competition, under the system of management responsibility that is the very essence of this country's whole industrial development. This freedom will make the railroads both profitable as investments and economical as your servants."

Jersey Central to Stay in Passenger Business—Moore

Accusations that the Jersey Central Lines are "trying to get out of the passenger business" were denied by President E. T. Moore in a recent address before the Newark, N. J., Traffic Club. "Concrete evidence that the Jersey Central expects to stay in the passenger business," he added, "is our expenditure of more than $9,000,000 for diesel-electric locomotives assigned to passenger trains, several hundred thousands of dollars spent to improve and modernize station facilities, and an expenditure of more than $250,000 annually for modernizing and keeping our passenger equipment at a high level of maintenance."

Although it may sound contradictory to say the road is trying to improve service and simultaneously reduce losses, Mr. Moore explained, the Jersey Central is doing just that. He pointed to increasing use of diesels; to stations revamped with new materials that cost less to maintain; and to improved train lighting that has the same advantage.

In its efforts to provide ever-better service there are limits beyond which the road cannot go, Mr. Moore continued. These, he said, stem from federal and state regulations which restrict all railroad management in its efforts to establish prices and service compatible with need and demand. He called attention to one 6½-mile stretch along the C.N.J. which has nine stations; "all are obviously not needed now" and yet "we cannot discontinue any without approval of regulatory commissions . . ."

"Corrosion in Action"

A sound-color film entitled "Corrosion in Action" has been prepared under the direction of the Corrosion Engineering Section of the International Nickel Company, 67 Wall street, New York 5.

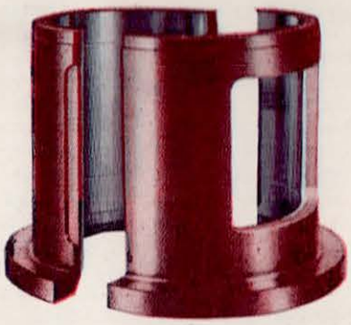
The film, in three parts of two reels each, shows how corrosion works to cause an annual loss in industry and elsewhere estimated at over six billion dollars. It also shows how this damage can be avoided or controlled by various means, such as selection of corrosion-resistant materials, development of new alloys to meet given situations, use of electric currents to provide cathodic protection, and other methods. The film can be shown in one part, in any combination of two parts, or in the full three-part length, depending on time available. Each part requires 20 minutes.

The film is scientific in its approach and was made essentially for technical, educational and industrial groups, though its treatment is such that it can be understood by non-technical audiences. It will be released for use in schools, colleges, industrial plants, and before technical societies. Bookings can be made through the Corrosion Engineering section of the company.

Name Engineers to Lead "Centennial" Sessions

Twelve widely known engineers have been named by Lenox R. Lohr, president of the "Centennial of Engineering," to act as chairmen for special general meetings that will comprise the convocation period of the celebration to be held in Chicago during this coming summer.

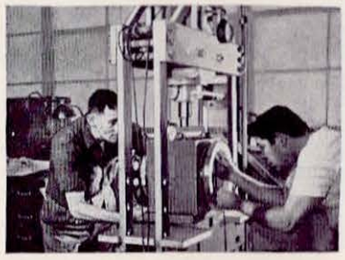
Charles F. Kettering, research consultant for General Motors Corporation,



Here's why you can be sure of

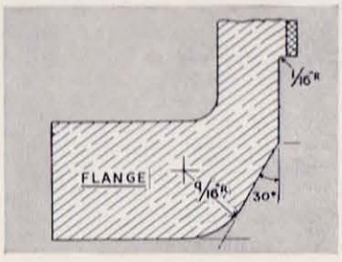
EXTRA TROUBLE-FREE MILEAGE

with Magnus Traction Motor Support Bearings

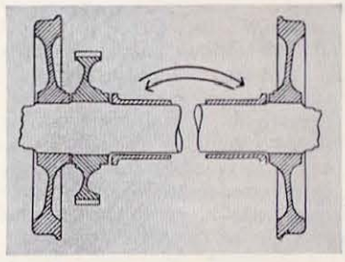


Perfectly Mated Bearing Halves are precision tested *under load*, to make sure that each bearing half takes only its fair share of the load.

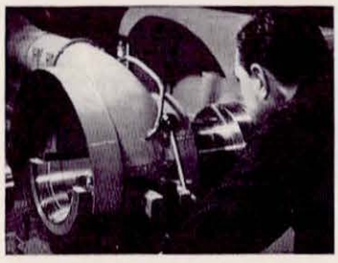
Satco Lining Metal, centrifugally applied, gives greater resistance to wear and load — stands up longer at elevated temperatures.



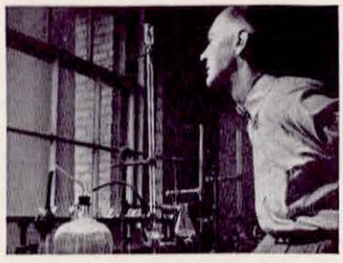
Improved Flange Fillet Profile prevents riding of the fillet or feathering of the lining metal—in standard or step sizes.



Interchangeable Double Keyway—a Magnus pioneered improvement that enables bearings to be used on either commutator or pinion shaft end.



Precision Finish Boring and close tolerance machining to rigid specifications give Magnus bearings unequalled quality and uniformity.



True Tested Hi-Strength Backs cast from high-tin, fine-grained wearing metal mixes that are *Magnus-guaranteed.*

TODAY'S trend to higher mileage between motor overhauls calls for an extra factor of safety in the road life of traction motor support bearings. And that's just what you get in Magnus HIGH MILEAGE bearings.

Each of the six Magnus features shown here is an important contribution to trouble-free bearing performance. Put them all together and you'll understand why it is that these precision-made bearings are setting mileage records in Diesel locomotives the country over.

Magnus HIGH MILEAGE Traction Motor Support Bearings are now available for replacement on all types and makes of Diesel and electric locomotives and MU cars. For the complete story, get your free copy of Bulletin No. 6000. Just write a post card or letter to Magnus Metal Corporation, 111 Broadway, New York 6, N. Y.; or 80 E. Jackson Blvd., Chicago 4, Ill.

MAGNUS

High Mileage

TRACTION MOTOR SUPPORT BEARINGS

...for every type and make of diesel locomotive

MAGNUS METAL CORPORATION *Subsidiary of* **NATIONAL LEAD COMPANY**

will act as convocation session chairman for the field of transportation. Other appointments of interest to railway and railway supply people include: (For the session on tools), Kenneth M. Condit, dean of the school of engineering, Princeton University; (for structures and construction), Waldo G. Bowman, editor, Engineering News-Record; (for communications), William H. Harrison, president, International Telephone & Telegraph Co.

It is expected that more than 25,000 leaders in American and foreign engineering bodies will participate in the event.

At the present time some 60 groups — including nine foreign societies — have pledged to join in the program. For the general public there will be a dramatic presentation to be staged on the grounds of the Museum of Science & Industry (*Railway Age*, March 3, page 78), as well as a special engineering exhibit in the museum.

I.C.C. Suggests Improved Ventilation for Diesel Cabs

Reporting on its investigation of a head-end collision between two Union Pacific freight trains, the Interstate Commerce Commission has indulged in speculation to the effect that enginemen of the train at fault might have been overcome by toxic gases from the exhaust of their diesel-electric locomotive.

While it stated flatly that the evidence did not establish the presence of toxic gases in the cab, the commission nevertheless suggested that "serious consideration should be given to improved ventilation and a means of detection of toxic gases in the control compartment of diesel-electric units in sufficient quantities to impair the faculties of employees operating the locomotive."

The commission's speculation was based on evidence indicating that there was no response from the locomotive to flagging signals, that none of the enginemen could be seen at his post as the train proceeded to the point of collision, and that the speed of the train and the wind velocity at the time might have set up conditions under which the locomotive's exhaust gases could have entered its cab. Moreover, the accident, which occurred November 25, 1951, at Orchard, Idaho, was "almost identical," as the commission put it, with another which occurred on the same line, near Coolidge, Idaho, on January 20, 1949. In both accidents, all employees on locomotives of the offending trains were killed.

The report on the Orchard collision was No. 3442—by Commissioner Patterson. The accident resulted in the death of five employees, including the engineer, fireman and head brakeman of the train at fault, and the engineer and firemen of the other train. These trains, respectively, were Extra 1553 West, a westbound freight consisting of a two-unit diesel and 68 cars, and Second 262, an eastbound freight consisting of a four-unit diesel and 117 cars.

The formal finding of the commission's report was that the accident was caused by "failure to operate the westbound train in accordance with yard-limit restrictions and signal indications."

The westbound train was required to take a siding at Orchard for its meeting with Second 262. Pursuant to that plan, Second 262 was stopped on the main line within yard limits at Orchard. While standing there, it was struck by Extra 1553 West, which was moving at an estimated speed of 50 m.p.h.

Before getting to its discussion of the toxic-gas theory, the commission mentioned evidence indicating that the brakes of Extra 1553 West had been functioning properly; that this train had been properly controlled in making four stops as it approached Orchard; and that its enginemen had Second 262 in mind, understanding that they were required to take the siding at Orchard to meet that train. The report then continued, in part, as follows:

"The operator at Orchard said that . . . he lined the route for the movement of Extra 1553 West. . . . Because he could not clear signal 4231, the operator obtained a white light and a yellow light and waited on the track in the vicinity of the signal to give the required hand signal to authorize Extra 1553 West to proceed to the siding after it had stopped at signal 4231. The operator observed that signal 4231 indicated Stop and that the headlight of Second 262 was dimmed. He said that he had left his office at 6:42 a.m., and at that time Extra 1553 West was about 2 miles east of the station.

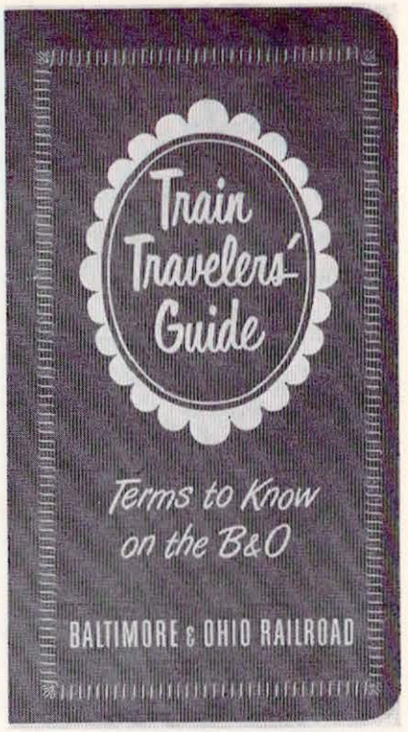
"When the approaching train was about 1,300 feet distant the operator became concerned and gave reduce-speed signals with the yellow and the white lights. When his signals were not answered and the speed of the train was not reduced he gave stop signals. He attempted to warn the crew of Second 262 but the yellow light became extinguished and he continued to give Stop signals to Extra 1553 West with the white light.

"When the train was closely approaching signal 4231 he left the track and ran to a step at the entrance of the station. He looked into the operating compartment as the locomotive passed the station but saw no member of the crew and the windows and the door on the south side of the control compartment were closed. He shouted a warning but there was no response from the members of the crew on the locomotive and the speed was not decreased before the accident occurred. He heard the sound of diesel motors of Extra 1553 West from the time he left his office and there was no change in the sound of the exhaust to indicate that the motors were shut off before the collision occurred. He did not hear the whistle sounded while the train was approaching the point where the accident occurred. Whistle posts for rail-highway grade crossings are located, respectively, 2,669 feet and 934 feet east of the station. . . .

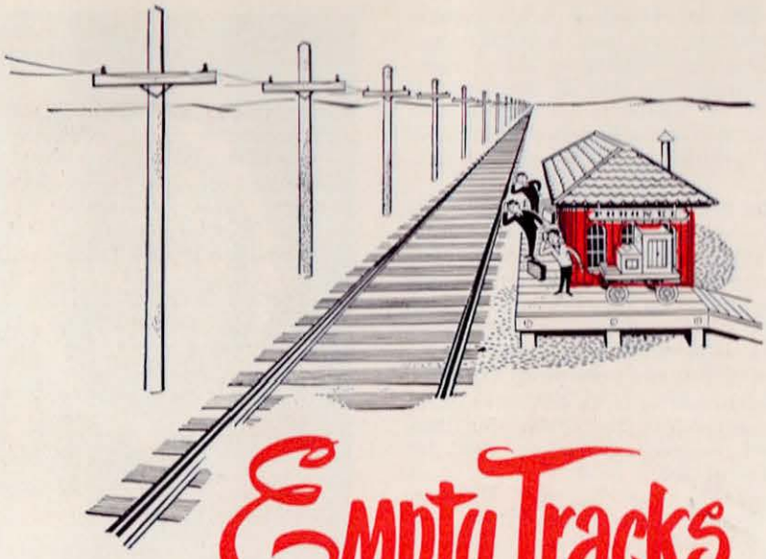
"Examination of the control compartment of the first diesel-electric unit of Extra 1553 West disclosed that the controlling apparatus was badly damaged as a result of the collision and fire. The automatic and independent brake valves were found in running position. The position of the throttle could not be determined and the tape of the speed recording device was destroyed.

"The members of the crew on the locomotive of Extra 1553 West were alert and normal when their train departed from Sebree [15½ mi. east of Orchard]. The investigation indicated that there was no appreciable reduction in the speed of the train, and power was being used up to the time of the collision. . . . From the extent of the damage which resulted from this accident it is apparent that Extra 1553 West was running at high speed when the accident occurred.

"There is no record of the weather conditions prevailing between Sebree and Orchard immediately before the accident occurred. A weather station at Mountain Home, approximately 15 miles southeast of Orchard, recorded a wind velocity of 15 to 18 m.p.h. from the southeast at 7 a.m., on the day of the accident. The weather station at Gowen Field, located about 3.5 miles south of Boise and about 30 miles west of the point of accident, reported a wind velocity of 16 m.p.h. from the east at 7:13 a.m., on that day. During the time that Extra 1553 West was moving on the ascending grade between Sebree and Cleft, 5.2 miles, the speed of the train was probably about equal to the wind velocity as recorded at the weather



DESIGNED ESPECIALLY for the inexperienced train traveler—but interesting and useful to any actual or potential passenger—is this 16-page, 3½-inch by 6¼-inch "Train Travelers' Guide" just issued by the Baltimore & Ohio. It defines 68 terms likely to be encountered by a traveler on the B. & O., from "Air-conditioning" to "Women's Travel Bureau"; it includes also an outline map of the railroad, addresses of its major ticket offices, and a list of its principal passenger trains.



Empty Tracks
cost money

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"Under this condition, the exhaust gases from the diesel engines would move along with the train, and air taken from the outside into the control compartment would contain these gases. Included in the exhaust gases of diesel engines is carbon monoxide, which is both colorless and odorless and toxic in effect when inhaled. On exposure to high concentrations of this gas, a person may be rendered unconscious without preliminary symptoms. After the accident occurred, it could not be determined whether this gas was present in the control compartment of diesel-electric unit 1553, and an autopsy was not performed to determine whether the employees on the diesel-electric unit had been affected by this gas. . . ."

RAILWAY OFFICERS

EXECUTIVE

Bernard S. Sines, whose appointment as vice-president of the TEXAS & NEW ORLEANS was announced by *Railway Age* April 7, began his railroad career as a chainman for the Union Pacific in 1921. He then served as instrumentman for the Illinois Central, joining the Southern Pacific in 1925 as assistant engineer. He was appointed executive assistant in 1937, and subsequently held positions as trainmaster, assistant superintendent, superintendent and executive representative. In April 1948 he was appointed vice-president of the subsidiary Southern Pacific of Mexico, becoming president of that line in December of that year, and holding that position until after the road was sold to the government of Mexico last December (*Railway Age*, December 31, 1951, page 57).

Bernard S. Sines

FINANCIAL, LEGAL & ACCOUNTING

Raymond Hector Ely has been appointed general auditor of the DELAWARE & HUDSON at Albany, N. Y., as

reported in *Railway Age* March 10. Mr. Ely was born on August 24, 1891, at Hector, N. Y., and entered railroad service in August 1909 with the Lehigh Valley accounting department at Sayre, Pa., as shop timekeeper, later becoming transportation timekeeper and transportation accountant. Mr. Ely joined the D.&H. in February 1917 as head transportation clerk in the office of division accountant, and subsequently served as head clerk in the office of auditor of disbursements, engineering accountant, supervisor accounting bureau in office of auditor of capital accounts at Albany, acting division accountant at Colonie (Watervliet), N. Y., and division accountant at Colonie. In October 1935 the division offices were abolished and accounting centralized in the auditor of disbursements' office at Albany. From November 1935 to September 1949 Mr. Ely was supervisor of various accounting sections in that office, and on the latter date became assistant to auditor of disbursements. In November 1950 he was appointed auditor of disbursements.

David J. Buckley has been appointed auditor of disbursements of the DELAWARE & HUDSON at Albany, N. Y., as reported in *Railway Age* March 10. Mr. Buckley was born on October 30, 1895, at Carbondale, Pa., where he entered the service of the D.&H. as clerk in the accounting department on September 1, 1913. After United States Army Air Corps service from November 1917 to April 1920, he returned to the D.&H. as clerk in the office of the comptroller at New York, subsequently becoming division accountant of the Pennsylvania division at Carbondale; general assistant, supervisor and assistant to auditor of disbursements, successively, at Albany. In January 1951 Mr. Buckley was appointed assistant auditor of disbursements at Albany.

TRAFFIC

F. X. Bell and **G. W. Terry** have been appointed traffic managers for the WABASH at Los Angeles and San Francisco, respectively. The positions of general agent have been abolished.

John C. Bland, whose appointment as assistant passenger traffic manager of the SOUTHERN at Memphis, Tenn., was announced by *Railway Age* March 10, entered railroad service on the Southern as a telegraph operator in 1906. After serving as telegrapher, assistant city passenger and ticket agent, and city passenger and ticket agent, he was promoted to passenger agent in 1918 and subsequently served as passenger agent and district passenger agent at several points. He became district freight and passenger agent in 1932 and in 1942 was promoted to assistant general passenger agent at Memphis. He was appointed general passenger agent there in 1946, and held that position at the time of his recent appointment.

OPERATING

Eugene F. Oviatt, whose appointment as superintendent of the Klamath division of the GREAT NORTHERN was announced by *Railway Age* on March 10, page 85, has been in G.N. service since 1938. A graduate of Yale University, Mr. Oviatt was a major in the

Eugene F. Oviatt

Military Railway Service in World War II, and returned to the railway in 1946. He was trainmaster at Great Falls, Mont., before going to Willmar, Minn., in 1950. He received his recent appointment while trainmaster there.

C. O. Hooker, whose appointment as general manager, Lines East, for the GREAT NORTHERN was announced by *Railway Age* March 10, page 85, entered service with the G.N. in 1909 as a brakeman. He became trainmaster in 1924, and in 1942 was advanced

C. O. Hooker

to superintendent of the Kalispell division at Whitefish, Mont. In 1943 he was transferred to the Dakota division at Grand Forks, N. D., and in 1944 to the Mesabi division at Superior, Wis. He received his recent appointment while serving in that capacity.

Roy H. Weeks, announcement of whose appointment as superintendent of car service for the ATCHISON, TOPEKA & SANTA FE at Topeka, Kan., appeared in *Railway Age* on March 10,

Roy H. Weeks

was first employed by the Santa Fe in 1910.

Mr. Weeks filled several clerical positions before being appointed special and later, traveling, car clerk in 1917. He was named assistant chief clerk in 1920, and chief clerk the same year. He was promoted to assistant to car accountant in 1928 and car accountant in 1935.

Paul H. Verd, whose appointment as general superintendent of the ELGIN, JOLIET & EASTERN was announced by *Railway Age* on March 3, and who started with that railroad in 1937 as diesel supervisor, was a 1931 electrical engineering graduate of the University of Washington. After serving in the

Paul H. Verd

Navy in World War II, where he was promoted successively from ensign to commander, he returned to the E.J.&E. in 1945 as master mechanic. In 1946 he was advanced to superintendent of motive power and equipment, and served in that capacity until his recent appointment.

George F. V. Middleton, whose appointment as superintendent of the Calgary division of the CANADIAN NA-

TIONAL was announced by *Railway Age* on March 10, page 85, began his railway career in the construction department of the C.N. in 1924. In 1926 he joined the operating department as trainman, becoming conductor in 1930. He was promoted to night yardmaster in 1942 and in 1945 was appointed assistant superintendent. He served in that capacity at several locations until his recent appointment as superintendent.

OBITUARY

John Dickinson, vice-president — general counsel of the PENNSYLVANIA at Philadelphia, died on April 9, as reported in *Railway Age* April 14. Mr. Dickinson was born on February 24, 1894, at Greensboro, Md. After graduation from Johns Hopkins University and work at Princeton which resulted in A.M. and Ph.D. degrees, Mr. Dickinson studied law at Harvard and received his law degree there in 1921. He was a lecturer in history at Amherst and in history, government and economics at Harvard. Following five years in the active practice of law in California, with the late William G. McAdoo, Mr. Dickinson became assistant professor of politics at Princeton and later professor of law at the University of Pennsylvania. After several years of association with the law firm of Sullivan & Cromwell, New York, he served as assistant secretary of commerce from 1933 to 1935 and for the next two years as assistant attorney general of the United States. He was chairman of the Central Statistical Board of the federal government from 1934 to 1935.

John Dickinson

Mr. Dickinson became general solicitor of the Pennsylvania in February 1937 and head of the road's legal department as general counsel in 1941. In June 1946 he was appointed vice-president—general counsel. He was the author of several books, including "The Building of an Army," "Administrative Justice and the Supremacy of Law," and "Hold Fast the Middle Way"; and was the translator of "The Statesman's Book of John of Salisbury." He received honorary Doctor of Laws degrees from Johns Hopkins, Dickinson College and Tusculum College. He was a fellow of the American Academy of Arts and Sciences and a director of the Social Science Research Council.

Meetings and Conventions

The following list gives names of secretaries, dates of next or regular meetings and places of meetings.

AIR BRAKE ASSOCIATION.—Lawrence Wilcox, Room 827, 80 E. Jackson Blvd., Chicago 4, Ill. Annual meeting, September 15-17, 1952, Hotel Sherman, Chicago, Ill.

ALLIED RAILWAY SUPPLY ASSOCIATION.—C. F. Weil, American Brake Shoe Company, 6th floor, 109 N. Wabash Ave., Chicago 2, Ill.

AMERICAN ASSOCIATION OF BAGGAGE TRAFFIC MANAGERS.—T. R. Stanton, acting secy.-treas., 1450 Railway Exchange Bldg., St. Louis 1, Mo. Annual meeting, June 3-5, 1952, Antlers Hotel, Colorado Springs, Colo.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—B. D. Branch, Eastern Timetable Distributing Company, Liberty Street Terminal, New York 6, N. Y. Annual meeting, October 13-15, 1952, Hotel Gunter, San Antonio, Tex.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—Miss Elise La Chance, Room 901, 431 S. Dearborn St., Chicago 5, Ill. Annual meeting, June 4-6, 1952, Hotel Sherman, Chicago, Ill.

AMERICAN ASSOCIATION OF TRAVELING PASSENGER AGENTS.—C. A. Melin, P. O. Box 5025, Cleveland 1, O. Annual meeting, Ocotber 6-8, 1952, Buena Vista Hotel, Biloxi, Miss.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—Miss Elise La Chance, Room 901, 431 S. Dearborn St., Chicago 5, Ill. Annual meeting, September 15-17, 1952, Conrad Hilton Hotel, Chicago, Ill.

AMERICAN RAILWAY CAR INSTITUTE.—W. C. Tabbert, 19 Rector St., New York 6, N. Y.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—R. O. Robertson, Chesapeake & Ohio, C. & O. Building, Huntington 1, W. Va. Annual meeting, May 12-14, 1952, Chateau Frontenac, Quebec, Can.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in cooperaiton with the Association of American Railroads, Engineering Division—Neal D. Howard, 59 E. Van Buren St., Chicago 5, Ill.

AMERICAN RAILWAY MAGAZINE EDITORS' ASSOCIATION.—T. J. Zirbes, Jr., Rock Island Lines News Digest, La Salle Street Station, Chicago 5, Ill. Annual meeting, October 20-22, 1952, Santa Fe, N. M.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—C. E. Huntley, 2000 Massachusetts Ave., N. W., Washington 6, D. C. Annual meeting, October 3-4, 1952, St. Francis Hotel, San Francisco, Calif.

AMERICAN SOCIETY FOR TESTING MATERIALS.—R. J. Painter, Asst. Secretary, 1916 Face St., Philadelphia 3, Pa. Annual meeting, June 23-27, 1952, Hotel Statler, New York. (Includes Exhibit of Testing Apparatus and Related Equipment and biennial Photographic Exhibit.)

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—C. E. Davies, 29 W. 39th St., New York 18, N. Y. Semi-annual meeting, June 15-19, 1952, Sheraton-Gibson Hotel, Cincinnati, O. Annual meeting, November 30-December 5, 1952, Hotel Statler, New York.

Railroad Division — E. L. Woodward, *Railway Mechanical and Electrical Engineer*, 79 W. Monroe St., Chicago 3, Ill.

AMERICAN WOOD-PRESERVERS' ASSOCIATION.—W. A. Penrose, 839 Seventeenth St., N. W., Washington 6, D. C. Annual meeting, April 22-24, 1952, Hotel New Yorker, New York.

ASSOCIATED TRAFFIC CLUBS OF AMERICA.—R. A. Ellison, Cincinnati Chamber of Commerce, 1203 Federal Reserve Bank Bldg., Cincinnati 2, O. Annual meeting, October 20-22, 1952, Hotel St. Paul, St. Paul, Minn.

ASSOCIATION OF AMERICAN RAILROAD DINING CAR OFFICERS.—W. F. Ziervogel, 605 S. Ranken Ave., St. Louis 3, Mo. Annual meeting, October 14-16, 1952, San Francisco, Cal.

ASSOCIATION OF AMERICAN RAILROADS.—George M. Campbell, Transportation Bldg., Washington 6, D. C.

Operation and Maintenance Department.—J. H. Aydelott, Vice-president, Transportation Bldg., Washington 6, D. C.

Operating-Transportation Division.—L. R. Knott, 59 E. Van Buren St., Chicago 5, Ill.

Operating Section.—H. S. Dewhurst, 59 E. Van Buren St., Chicago 5, Ill.

Transportation Section.—H. A. Eaton, 59 E. Van Buren St., Chicago 5, Ill.

Communications Section.—A. H. Grothmann, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, October 21-23, 1952, Edgewater Gulf Hotel, Edgewater Park, Miss.

Fire Protection and Insurance Section.—W. E. Todd, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, October 20-22, 1952, New Orleans, La.

Freight Station Section.—W. E. Todd, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, May 14-16, 1952, Netherland Plaza Hotel, Cincinnati, O.

Medical and Surgical Section.—H. S. Dewhurst, 59 E. Van Buren St., Chicago 5, Ill.

Protective Section.—H. S. Dewhurst, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, May 6-8, 1952, Hotel Schroeder, Milwaukee, Wis.

Safety Section.—H. S. Dewhurst, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, June 3-5, 1952, Hotel Statler, New York.

Electrical Section of the Engineering and Mechanical Divisions.—S. W. Marras, 59 E. Van Buren St., Chicago 5, Ill.

Engineering Division.—Neal D. Howard, 59 E. Van Buren St., Chicago 5, Ill.

Construction and Maintenance Section.—Neal D. Howard, 59 E. Van Buren St., Chicago 5, Ill.

Signal Section.—R. H. C. Balliet, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, September 29-October 1, 1952, Chateau Frontenac, Quebec, Can.

Mechanical Division.—Fred Peronto, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, June 24-26, 1952, Fairmont Hotel, San Francisco, Cal.

Purchases and Stores Division.—John L. Timanus, Transportation Bldg., Washington 6, D. C. Annual meeting, June 2-4, 1952, Palmer House, Chicago, Ill.

Freight Claim Division.—C. C. Beauprie, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, June 2-4, 1952, Hotel Statler, New York City.

Motor Transport Division.—George M. Campbell, Transportation Bldg., Washington 6, D. C.

Car Service Division.—Arthur H. Gass, Chairman, Transportation Bldg., Washington 6, D. C.

Finance, Accounting, Taxation and Valuation Department.—Transportation Bldg., Washington 6, D. C.

Accounting Division.—E. R. Ford, Transportation Bldg., Washington 6, D. C. Annual meeting, June 10-13, 1952, Book-Cadillac Hotel, Detroit, Mich.

Treasury Division.—E. R. Ford, Transportation Bldg., Washington 6, D. C. Annual meeting, September 9-11, 1952, New Ocean House, Swampscott, Mass.

Traffic Department.—Walter J. Kelly, Vice-President, Transportation Bldg., Washington 6, D. C.

ASSOCIATION OF INTERSTATE COMMERCE COMMISSION PRACTITIONERS.—Miss Sarah F. McDonough, Executive Secretary, 2218 I.C.C. Building, Washington 25, D. C. Annual meeting, May 13-14, 1952, St. Francis Hotel, San Francisco, Cal.

ASSOCIATION OF RAILROAD ADVERTISING MANAGERS.—C. D. Perrin, Asst. Secy., 85 West Harrison St., Chicago 5, Ill.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—F. L. Johnson, Gulf, Mobile & Ohio A. R., 104 St. Francis St., Mobile 5, Ala. Annual meeting, June 10-13, 1952, Mount Royal Hotel, Montreal, Quebec.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—L. R. Gurley, Modern Railroads, 201 N. Wells St., Chicago 6, Ill.

CANADIAN RAILWAY CLUB.—C. R. Crook, P.O. Box 162, Montreal 3, Que. Regular meetings, second Monday of each month, except June, July and August, Mount Royal Hotel, Montreal, Que.

CAR DEPARTMENT ASSOCIATION OF ST. LOUIS.—D. W. Kramer, Relay Depot Mail Room, East St. Louis, Ill. Regular meetings fourth Tuesday of each month, except June, July and August, Hotel DeSoto, St. Louis, Mo.

CAR DEPARTMENT OFFICERS' ASSOCIATION.—F. H. Stremmel, 6536 Oxford Ave., Chicago 31, Ill. Annual meeting, September 15-17, 1952, Hotel Sherman, Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—W. H. LaMon, Chicago, Burlington & Quincy, Downers Grove, Ill. Regular meetings, second Monday of each month, except June, July and August, LaSalle Hotel, Chicago, Ill.

CENTRAL RAILWAY CLUB OF BUFFALO.—R. E. Mann, Hotel Statler, McKinley Square, Buffalo 5, N. Y. Regular meetings, second Thursday of each month, except June, July and August, Hotel Statler, Buffalo, N. Y.

EASTERN ASSOCIATION OF CAR SERVICE OFFICERS.—H. C. Rochester, Canadian National, 891 Notre Dame St. West, Montreal 3, Que. Next meeting, May 1-2, 1952, Morrison Hotel, Chicago, Ill.

EASTERN CAR FOREMAN'S ASSOCIATION. — W. P. Dizard, 30 Church St., New York 7, N. Y. Regular meetings, second Friday of January, February, March April, May, October and November, 29 W. 39th St., New York, N. Y.

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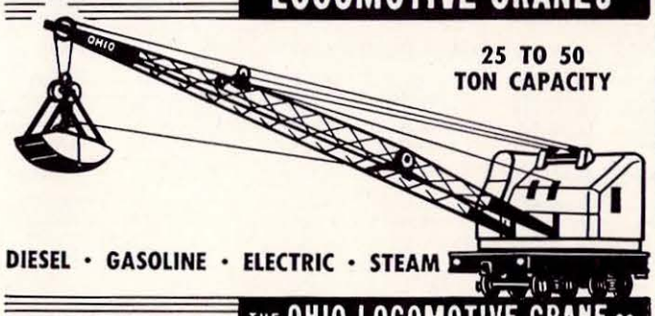

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4-21-52

C. M. Lipscomb, 1721 Parker St., North Little Rock, Ark. Annual meeting, September 15-17, 1952, Hotel Sherman, Chicago, Ill.

MAINTENANCE OF WAY CLUB OF CHICAGO.—E. C. Patterson, 400 W. Madison St., Chicago 6, Ill. Regular meetings, fourth Monday of each month, October through April, inclusive, except December, which is third Monday, at Eitel's Restaurant, Field Bldg.

MASTER BOILER MAKERS' ASSOCIATION. — A. F. Stiglmeier, 29 Parkwood St., Albany 8, N. Y. Annual meeting, September 15-17, 1952, Hotel Sherman, Chicago, Ill.

METROPOLITAN MAINTENANCE OF WAY CLUB.—John S. Vreeland, Simmons-Boardman Publishing Corp., 30 Church St., New York 7, N. Y. Meets in February, April, October, and December. Next meeting, April 24, 1952, Hotel Shelburne, New York.

MILITARY RAILWAY SERVICE VETERANS.—Carl N. Rydin, 605 Railway Exchange, Chicago 4, Ill. Annual meeting, September 19-20, 1952, Hotel New Yorker, New York.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—Austin L. Roberts, Jr., 7413 New Post Office Bldg., Washington 4, D. C. Annual meeting, November 10-13, 1952, Hotel Marion, Little Rock, Ark.

NATIONAL ASSOCIATION OF SHIPPERS' ADVISORY BOARDS.—C. L. Denk, Jr., Fulton Bag & Cotton Mills, 170 Boulevard Elsas, S.E., Atlanta 3, Ga. Annual meeting, October 7-9, 1952, Hotel Jefferson, St. Louis, Mo.

NATIONAL DEFENSE TRANSPORTATION ASSOCIATION.—Miss Lois E. Casavant, 930 F St., N. W., Washington 4, D. C. Annual meeting, October 27-29, 1952, Hotel Statler, New York.

NATIONAL INDUSTRIAL TRAFFIC LEAGUE. — Edward F. Lacey, 909 Kass Bldg., Washington 5, D. C. Annual meeting, November 20-21, 1952, Hotel Statler, New York.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—J. B. Templeton, Templeton, Kenly & Co., 1020 S. Central Ave., Chicago 44, Ill. Lewis Thomas, Asst. Secy., 59 E. Van Buren St., Chicago 5, Ill.

NATIONAL SAFETY COUNCIL, RAILROAD SECTION. — R. S. James, Denver & Rio Grande Western, Rio Grande Building, Denver 1, Colo.

NEW ENGLAND RAILROAD CLUB.—William M. McCombs, 35 Lewis Wharf, Boston 10, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Hotel Vendome, Boston, Mass.

NEW YORK RAILROAD CLUB.—C. T. Stansfield, 30 Church St., New York 7, N. Y. Regular meetings, third Thursday of each month, except June, July, August, September and December, 29 W. 39th St., New York, N. Y.

NORTHWEST CARMEN'S ASSOCIATION.—G. H. Wells, Northern Pacific Railway, St. Paul 1, Minn. Regular meetings, first Monday of each month, except June, July and August, Midway Club, 1931 University Ave., St. Paul, Minn.

NORTHWEST LOCOMOTIVE ASSOCIATION. — R. M. Wigfield, Northern Pacific Ry., Room 1134, G. O. Bldg., St. Paul 1, Minn. Regular meetings, third Monday of each month, except June, July and August, Midway Club, 1931 University Ave., St. Paul, Minn.

PACIFIC RAILWAY CLUB. — S. E. Byler, 121 E. Sixth St., Los Angeles 14, Cal. Regular meetings, second Thursday of each alternate month at Sir Francis Drake Hotel, San Francisco, Cal., and Elks' Temple, Los Angeles, Cal.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton, 38 S. Dearborn St., Chicago 3, Ill. Annual meeting, November 21, 1952, Waldorf-Astoria, New York.

RAILWAY CLUB OF PITTSBURGH.—614 Pittsburgh Life Bldg., Pittsburgh 22, Pa. Regular meetings, fourth Thursday of each month, except June, July, August, September and December, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRIC SUPPLY MANUFACTURERS' ASSOCIATION. — J. McC. Price, Allen-Bradley Company, 415-447 N. LaSalle St., Chicago 10, Ill. Exhibit in conjunction with the meetings of the Coordinated Mechanical Associations, September 15-17, 1952, Hotel Sherman, Chicago, Ill.

RAILROAD FUEL AND TRAVELING ENGINEERS' ASSOCIATION.—L. H. Peters, New York Central, Room 1213, 139 W. Van Buren St., Chicago 5, Ill. Annual meeting, September 15-17, 1952, Hotel Sherman, Chicago, Ill.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION. — A. W. Brown, 60 E. 42nd St., New York 17, N. Y.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION. — G. A. Nelson, Waterbury Battery Company, 30 Church St., New York 7, N. Y. Meets with Communications Section of A.A.R.

RAILWAY TIE ASSOCIATION. — Roy M. Edmonds, 1221 Locust St., St. Louis 3, Mo. Annual meeting, October 22-24, 1952, Jung Hotel, New Orleans, La.

ROADMASTERS AND MAINTENANCE OF WAY ASSOCIATION.—Miss Elise La Chance, Room 901, 431 S. Dearborn St., Chicago 5, Ill. Annual meeting, September 15-17, 1952, Conrad Hilton Hotel, Chicago, Ill.

ST. LOUIS RAILROAD DIESEL CLUB.—F. C. Whitlock, Terminal Railroad Association of St. Louis, 376 Union Station, St. Louis 3, Mo. Regular meetings, second Tuesday of each month, Hotel York, St. Louis, Mo. Dinner, 6:45 P.M., meeting 8 P.M.

SIGNAL APPLIANCE ASSOCIATION. — G. A. Nelson, Waterbury Battery Company, 30 Church St., New York 7, N. Y. Meets with A.A.R. Signal Section.

SOUTHEASTERN RAILWAY DIESEL CLUB. — H. W. Brewer, Seaboard Air Line, Jacksonville, Fla. Regular meetings, second Tuesday in February, April, June, August, October and December, 9:30 a.m., Mayflower Hotel, Jacksonville, Fla.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB. — A. T. Miller, 4 Hunter St., S. E., Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta, Ga.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—F. I. Umhau, Southern Ry., Atlanta 3, Ga.

TORONTO RAILWAY CLUB.—J. A. North, P.O. Box 8, Terminal "A," Toronto 2, Ont. Regular meetings, fourth Monday of each month, except June, July, and August, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION.—Lewis Thomas, Q and C Company, 59 E. Van Buren St., Chicago 5, Ill.

WESTERN RAILWAY CLUB.—E. E. Thulin, Suite 339, Hotel Sherman, Chicago 1, Ill. Meetings scheduled for April 21, May 19, 1952, Hotel Sherman, Chicago, Ill.

WESTERN ASSOCIATION OF RAILWAY TAX COMMISSIONERS.—M. L. Boydston, 516 W. Jackson Blvd., Chicago 6, Ill. Regular meetings, 12:15, first Wednesday of each month, except July and August, Traffic Club, Palmer House, Chicago, Ill.

OPERATING REVENUES AND OPERATING EXPENSES OF CLASS I STEAM RAILWAYS

Compiled from 127 monthly reports of revenues and expenses representing 131 Class I steam railways

(Switching and Terminal Companies Not Included)

FOR THE MONTH OF JANUARY 1952 AND 1951

Item	United States		Eastern District		Southern District		Western District	
	1952	1951	1952	1951	1952	1951	1952	1951
Miles of road operated at close of month	225,853	226,083	53,218	53,313	45,837	45,956	126,798	126,814
Revenues:								
Freight	$712,905,891	$709,736,094	$266,043,306	$264,724,450	$159,745,008	$151,719,921	$287,117,577	$293,291,723
Passenger	82,343,133	78,158,286	42,723,482	40,150,848	13,452,700	12,869,361	26,166,951	25,138,077
Mail	25,421,556	19,295,073	9,844,297	7,314,463	4,265,066	3,306,498	11,312,193	8,674,112
Express	9,460,154	6,365,835	3,591,053	1,851,315	2,020,004	1,355,533	3,849,097	3,158,987
All other operating revenues	36,903,377	35,173,438	16,254,500	15,899,452	6,877,155	6,132,297	13,771,722	13,141,689
Railway operating revenues	867,034,111	848,728,726	338,456,638	329,940,528	186,359,933	175,383,610	342,217,540	343,404,588
Expenses:								
Maintenance of way and structures	118,536,815	106,926,218	44,709,035	38,818,858	26,252,708	24,964,963	47,575,072	43,142,397
Depreciation	11,302,762	11,206,419	4,659,382	4,602,183	2,089,678	2,089,704	4,553,702	4,514,532
Retirements	510,443	634,256	144,704	179,445	52,299	57,980	313,440	396,831
Deferred maintenance	.....	*206,405	.....	*206,405	.....	.....	.....	.....
Amortization of defense projects	.....	.....	.....	.....	.....	.....	.....	.....
Equalization	7,819,158	7,621,208	5,295,434	3,680,492	2,155,305	2,424,263	368,419	1,516,453
All other	98,904,452	87,670,740	34,609,515	30,563,143	21,955,426	20,393,016	42,339,511	36,711,581
Maintenance of equipment	167,476,938	157,282,135	68,048,066	66,683,423	34,815,237	30,883,625	64,613,635	59,715,087
Depreciation	27,584,920	26,300,549	9,764,796	9,511,402	6,295,001	5,943,517	11,525,123	10,845,630
Retirements	*105,497	*57,034	*29,655	*18,436	*23,435	*19,999	*52,407	*18,599
Deferred maintenance and major repairs	*1,032,213	*2,059,169	*1,032,213	*2,040,265	.....	*1,904	.....	*17,000
Amortization of defense projects	.....	.....	.....	.....	.....	.....	.....	.....
Equalization	1,104,399	48,876	645,586	*9,018	786,254	301,494	*327,441	*243,600
All other	139,925,329	133,048,913	58,699,552	59,239,740	27,757,417	24,660,517	53,468,360	49,148,656
Traffic	18,320,525	17,115,546	6,065,230	5,669,312	3,838,756	3,598,398	8,416,539	7,847,836
Transportation—Rail line	342,664,674	327,414,811	145,961,602	140,036,900	63,041,653	60,092,774	133,661,419	127,285,137
Miscellaneous operations	11,505,018	10,522,368	4,120,236	3,799,197	1,836,997	1,641,839	5,547,785	5,081,332
General	26,865,388	25,155,852	10,381,072	9,593,200	5,701,241	5,428,731	10,783,075	10,133,921
Railway operating expenses	665,369,358	644,416,930	279,285,241	264,600,890	135,486,592	126,610,330	270,597,525	253,205,710
Net revenue from railway operations	181,664,753	204,311,796	59,171,397	65,339,638	50,873,341	48,773,280	71,620,015	90,198,878
Railway tax accruals	100,806,300	109,020,627	29,535,125	31,431,380	28,182,980	28,201,346	43,088,195	49,387,901
Pay-roll taxes	24,577,965	23,115,637	10,005,415	9,660,992	4,850,902	4,410,937	9,721,648	9,043,708
Federal income taxes†	46,242,662	56,888,586	8,615,526	11,271,565	16,636,261	17,441,537	20,990,875	28,175,484
All other taxes	29,985,673	29,016,404	10,914,184	10,498,823	6,695,817	6,348,872	12,375,672	12,168,709
Railway operating income	80,858,453	95,291,169	29,636,272	33,908,258	22,690,361	20,571,934	28,531,820	40,810,977
Equipment rents—Dr. balance	11,154,070	12,734,714	5,817,877	6,401,427	*440,072	*485,574	5,776,265	6,818,861
Joint facility rent—Dr. balance	3,637,506	3,641,951	1,695,754	1,774,204	614,687	574,796	1,327,065	1,292,951
Net railway operating income	66,066,877	78,914,504	22,122,641	25,732,627	22,515,746	20,482,712	21,428,490	32,699,165
Ratio of expenses to revenues (percent)	79.0	75.9	82.5	80.2	72.7	72.2	79.1	73.7

† Includes income tax, surtax, and excess profits tax.
* Decrease, deficit or other reverse item.
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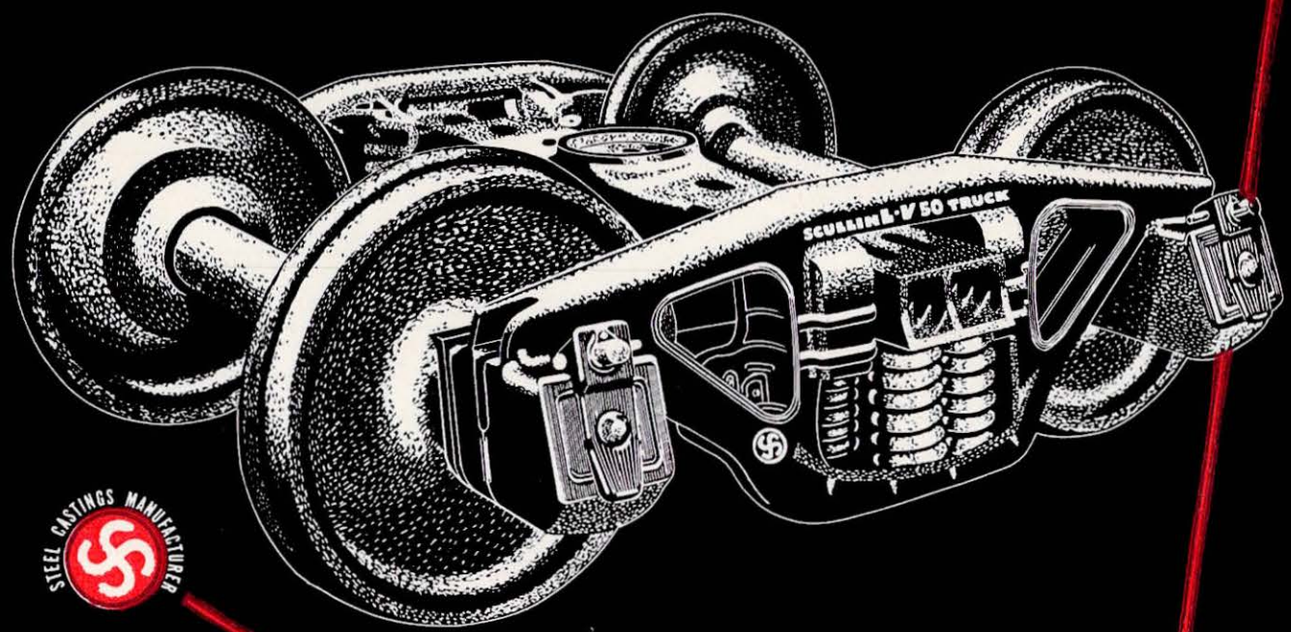

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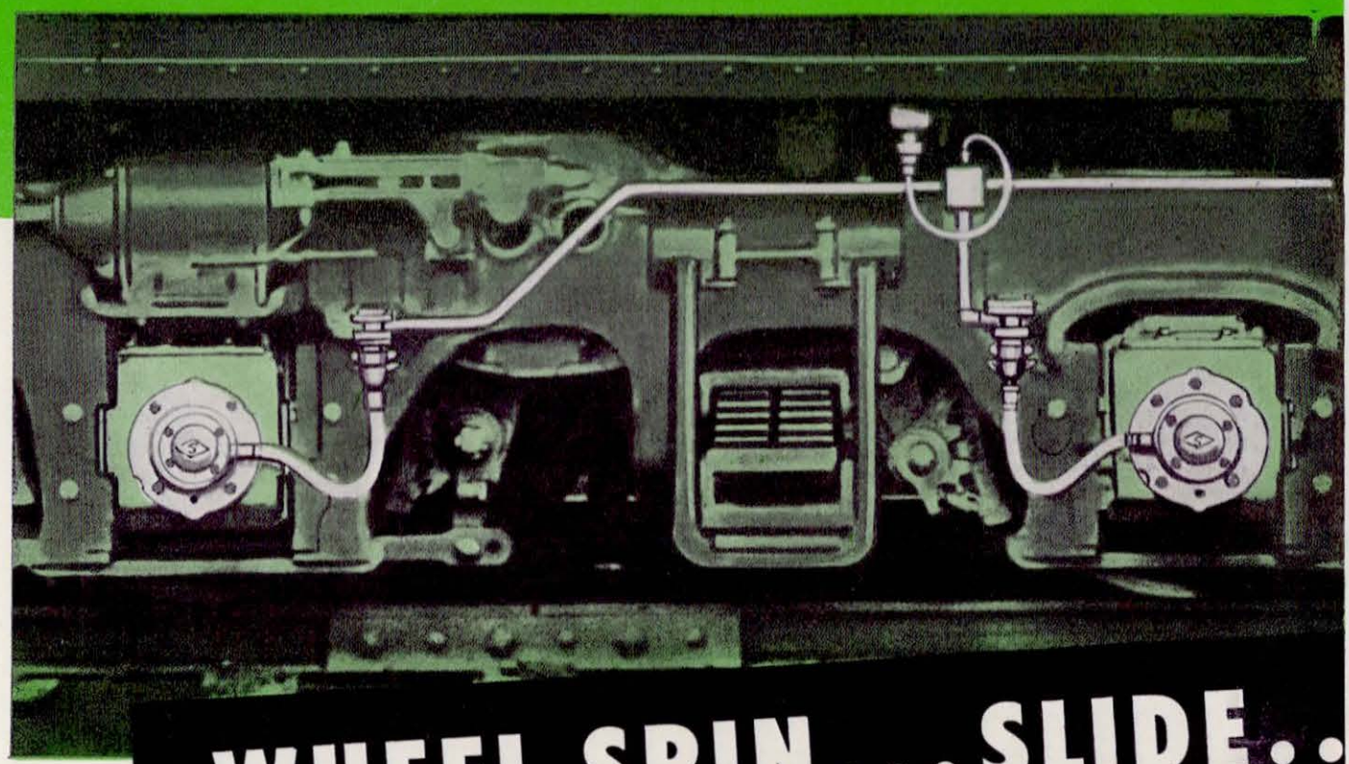

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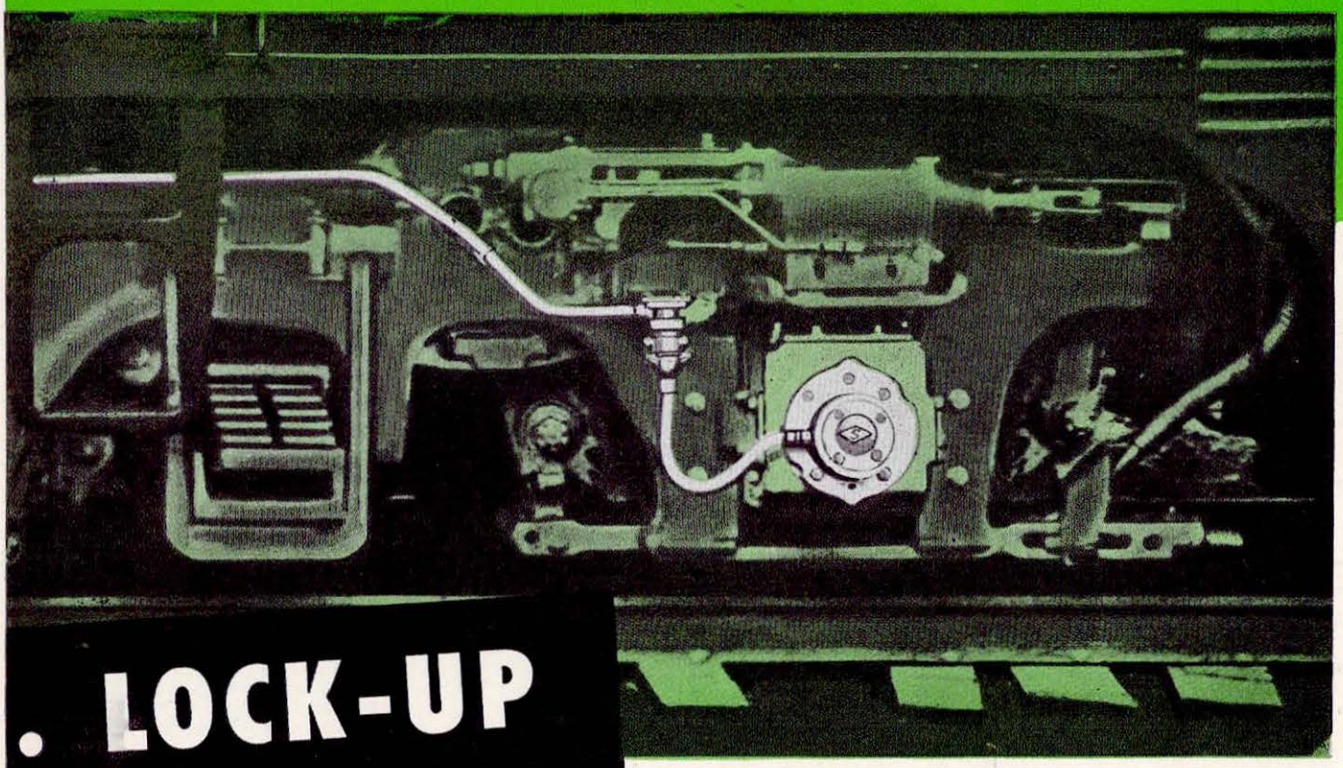

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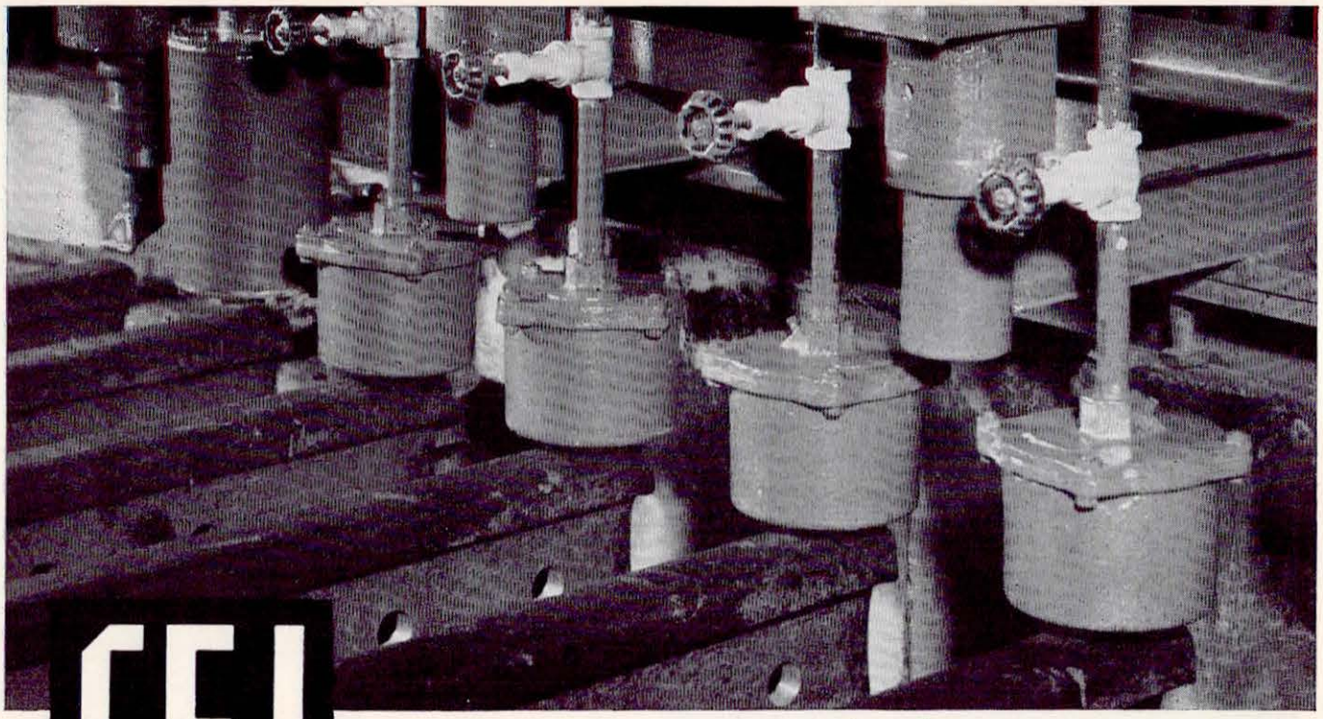

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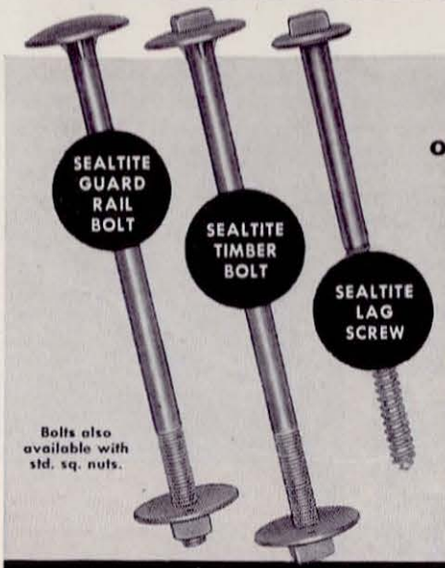

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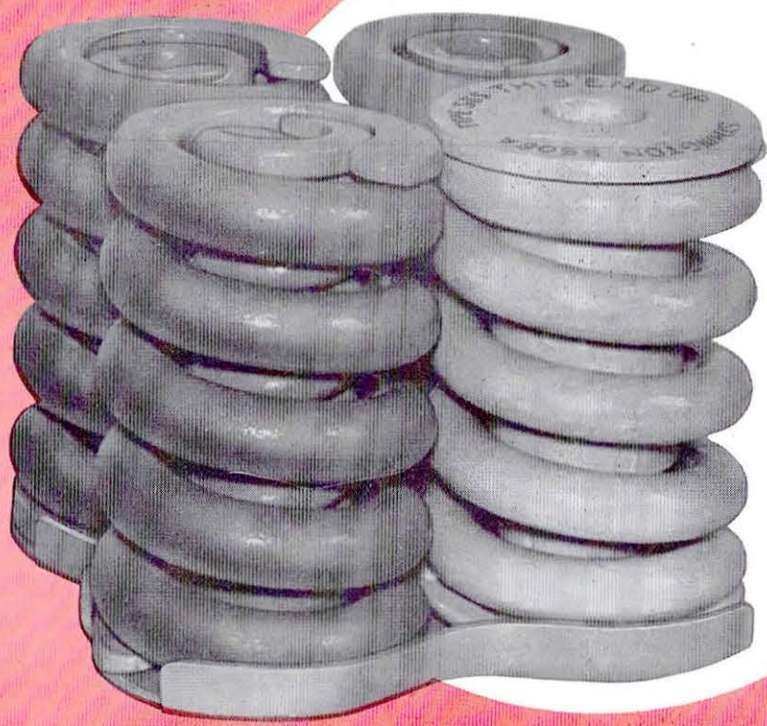

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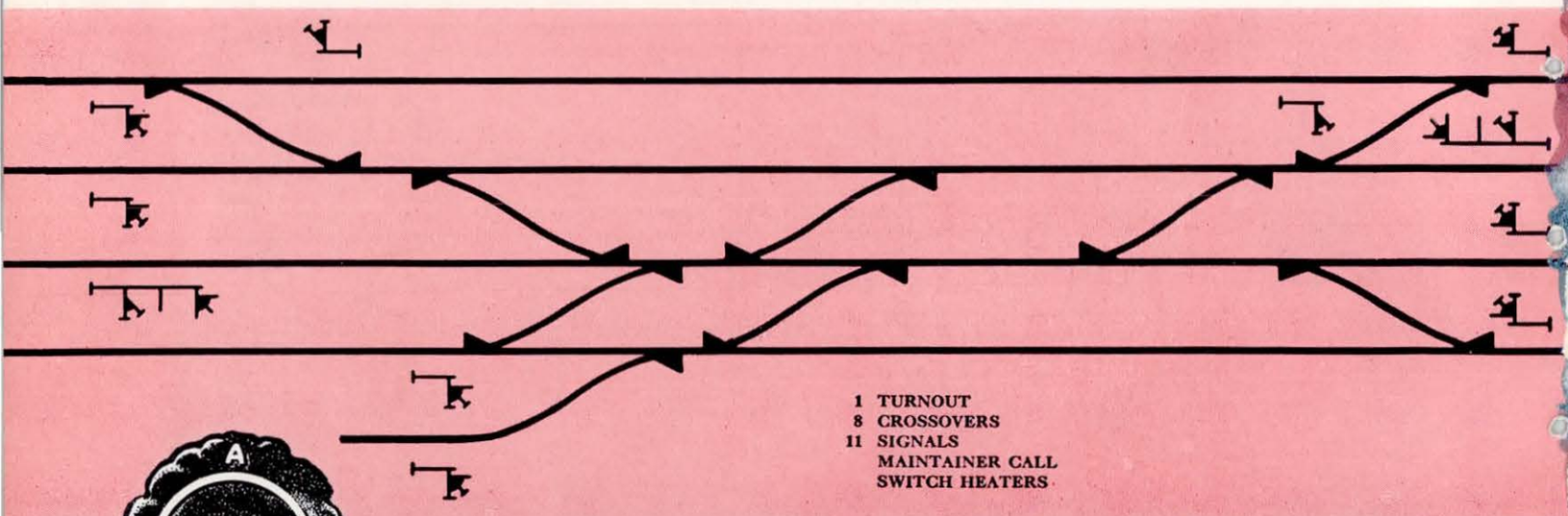

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